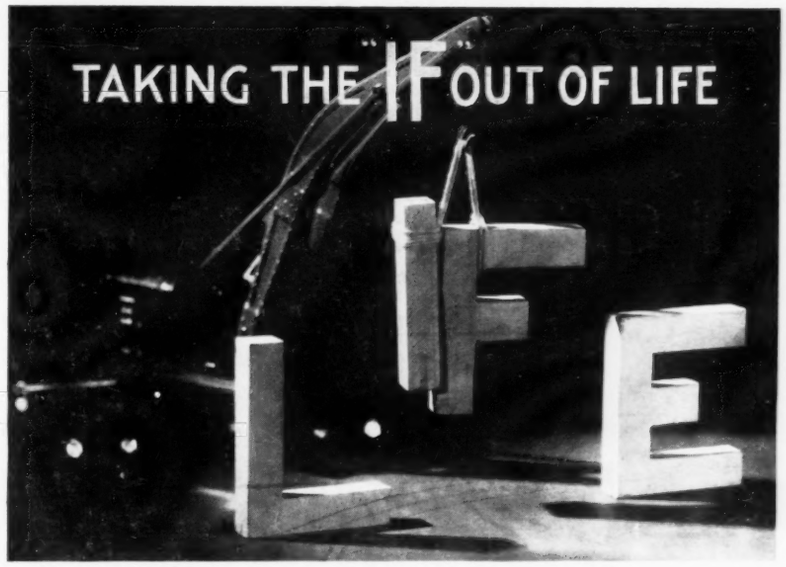
KNITTING ARTS EXHIBITION NUMBER

APRIL COTTON 1941

SERVING THE Textile Industries



with HUMAN SECURITY

Do your Employees have the benefits of a dependable plan of protection at low-cost which can lift that big IF out of their lives? . . . the IF that makes for worry and uncertainty . . . the threat of financial disaster IF the unexpected illness strikes, or a sudden accident . . . perhaps a trip to the hospital.

Hundreds upon hundreds of leading industrial firms are now making it possible for their Employees to safeguard against such emergencies with Provident HUMAN SECURITY plans.

Without obligation, let us show you exactly what such a HUMAN SECURITY Plan can mean to Employers and Employees of your plant.

HUMAN SECURITY

- Death in family
- Loss of time due to Sickness or Accident
- Hospitalization or operation when necessary
- Aiding dependents upon death of employee
- Maternity benefits

EMERGENCY INCOME

PROVIDENT
LIFE AND ACCIDENT
INSURANCE COMPANY
CHATTANOOGA — SINCE 1887 — TENNESSEE

• Specialists in HUMAN SECURITY (Emergency Income) Plans for Over a Half-Century •

Naphtols

FAST COLOR SALTS AND BASES

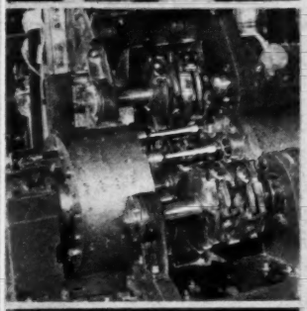
28 NAPHTOLS

49 DEVELOPERS

GENERAL DYESTUFF CORPORATION

435 HUDSON STREET · NEW YORK

BOSTON · CHARLOTTE · CHICAGO · PHILADELPHIA · PROVIDENCE · SAN FRANCISCO



"Draper Bobbins Are Expensive"

Yes, Sir, they are. They are expensively made. We never spare expense in our manufacturing processes when we can get better quality. Quality means better service to those who buy Draper bobbins.

Expensive but Not Extravagant

Did you ever hear of the Buyer who told the Big Boss, "We used to buy 'em at the High Price of 50 Cents; now we buy 'em at the Low Price of One Dollar." When the Big Boss got the full meaning of the remark, he gave the Buyer a boost in salary.

For What You Pay You Get More Value per Dollar

in Draper Bobbins than you can get in any other Bobbins you can buy anywhere.

DRAPER CORPORATION

Hopedale Massachusetts

Atlanta Georgia Spartanburg S C

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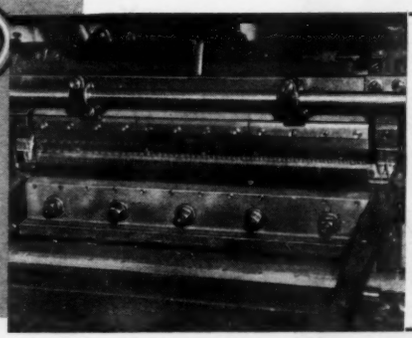
Volume 105. Number 4.

Knitting needles

PROTECTED AGAINST MOISTURE



CLOSE-UP of needles kept polished, free from rust and wear with *Texaco White Needle Oil B*, in Rosedale Knitting Mills, Reading, Pa. Rosedale reports machines free from gumming, needle life lengthened since using Texaco.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

★ More railroad rolling equipment in the U. S. is lubricated with Texaco than with any other brand.

★ More tourists use Texaco *Fire-Chief* Gasoline than any other brand.

★ More scheduled airline mileage within the U. S. and to other countries is flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

TEXACO DEALERS INVITE YOU TO ENJOY FRED ALLEN in a full-hour program every Wednesday night. CBS, 9:00 E.S.T., 8:00 C.S.T., 10:00 M.S.T., 9:00 P.S.T.

YOUR KNITTING NEEDLES will stay free from rust being fully protected from wetted yarn and highly humid air when you use *Texaco White Needle Oil B*...thus permitting continuous formation of uniform loops course after course.

Texaco White Needle Oil B is also free from gum-forming substances. It resists oxidation, rancidity and rust formation, assuring smoother machine operation and avoiding stock spoilage. This oil is easily and completely scoured from gray goods.

The outstanding performance that has made Texaco preferred in the textile field has also made it preferred in the fields listed in the panel.

Buyers in these fields are enjoying many benefits. You, too, will find important advantages when you use Texaco Lubricants and Fuels.

Let a Texaco Lubrication Engineer cooperate in lengthening needle life in your mill. Phone the nearest of more than 2300 Texaco distributing plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

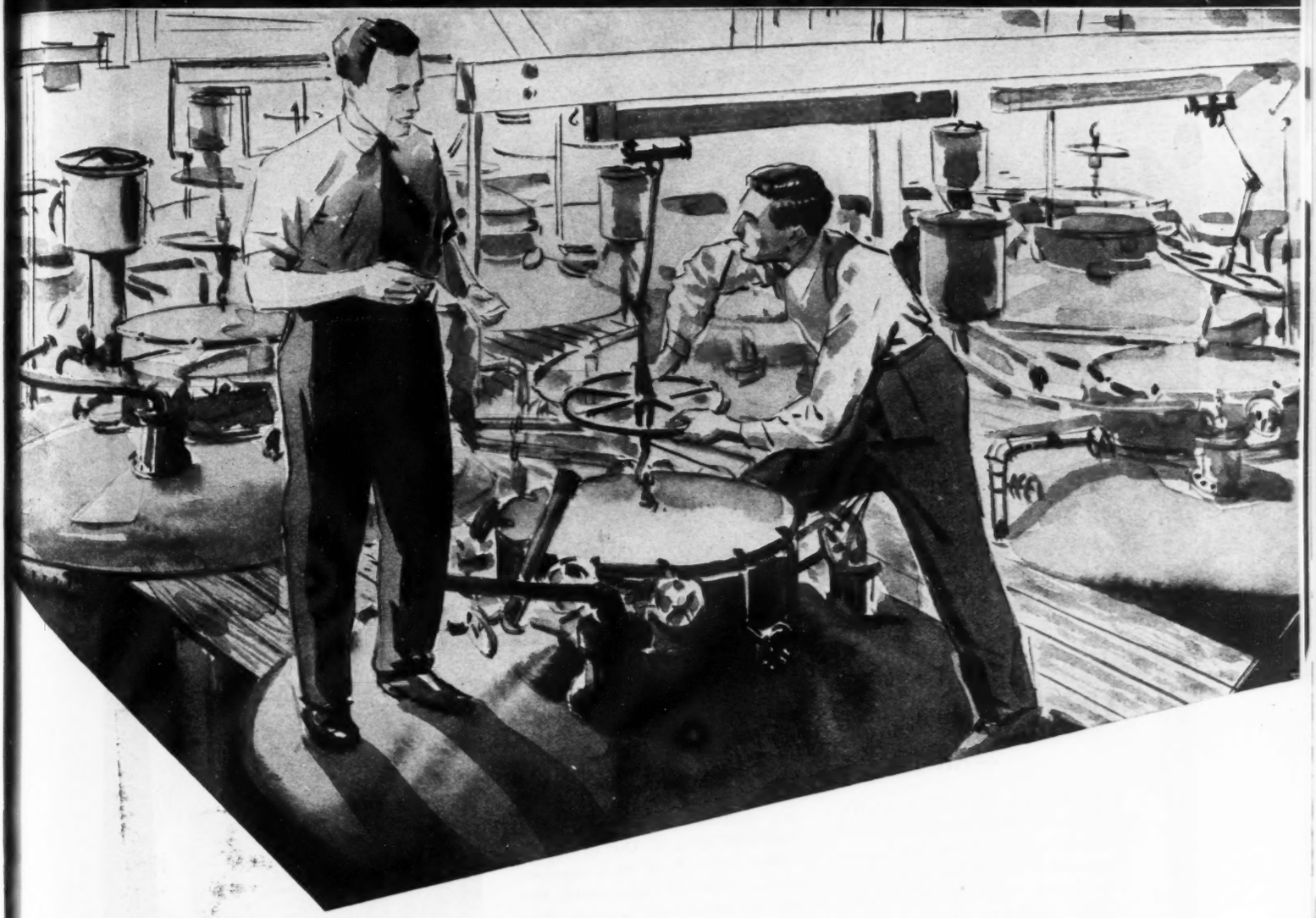
TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

"WE'RE GETTING UNIFORMLY GOOD SCOURING AND MIGHTY LEVEL DYEING THESE DAYS."

"YES, OUR RESULTS HAVE BEEN CONSISTENTLY SATISFACTORY SINCE WE SWITCHED TO **WARNER TEXTILE GRADE CAUSTIC SODA.**"



Good wet finishing and level dyeing demand a caustic soda that is uniform in analysis, car after car. By standardizing on Warner Textile Grade Caustic Soda, many leading mercerizers, dyers and finishers find that they get gratifying results and make worthwhile economies, too.

Warner Textile Grade Caustic Soda is furnished in 50% and 70% concentrations — as well as 73% concentrations shipped in specially lined tank cars. Also, flake and solid. Why not get a quotation on a sample car for prompt shipment from our conveniently-nearby plant at Charleston, West Virginia?

WARNER TEXTILE GRADE CAUSTIC SODA

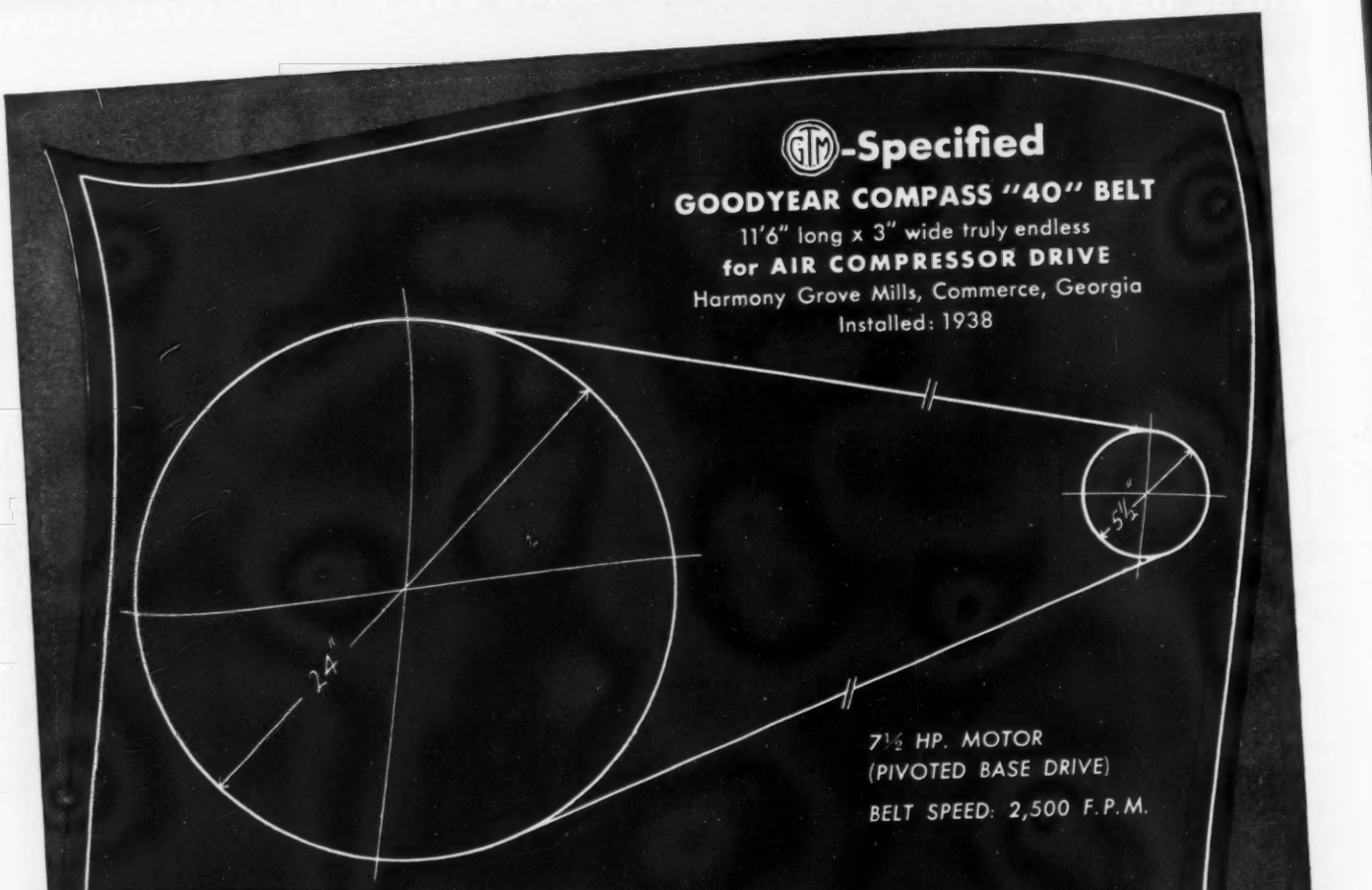
Phosphoric Acid
Sodium Phosphates
Bromine
Liquid Caustic Potash
Carbon Tetrachloride
Chlorine, Liquid
Trichlorethylene
Perchlorethylene
Carbon Bisulfide
Sodium Sulfide
Epsom Salt
Hydrogen Peroxide
Tetra Sodium Pyrophosphate

WARNER CHEMICAL COMPANY

Division of

WESTVACO CHLORINE PRODUCTS CORPORATION

Chrysler Building, New York City



INCREASES BELT LIFE *26 Times*

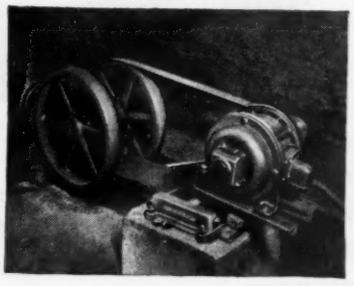
—on belt-blitzing drive!

DOWN at the Harmony Grove Mills in Commerce, Georgia, there's an air compressor drive which at one time was a real belt killer. Due to the narrow faces of the pulleys, belting of extra thickness was used. This caused ply-separation in even the best-grade conventional belts, cutting service life to a three weeks' average.

Finally, the G.T.M. – Goodyear Technical Man – was asked to specify a belt strong enough to drive the load, yet flexible enough to bend easily around the small 5½" drive pulley. He recommended a Goodyear COMPASS "40." This belt gave trouble-free service for eighteen months – just 26 times as long as the best previous belt. And at a smaller outlay, too! What's more, the replacement belt was another COMPASS, which, at this date, is on its way to a new record for the drive.

The reason is: COMPASS belts are 25% thinner than others of equal horsepower capacity – insuring far less internal friction, longer flex-life and an ever-tight, speed-holding grip on the pulleys.

Why not let the G.T.M. apply the advantages of patented COMPASS construction to your belt problems? A line will bring him to your plant. Write Goodyear, Akron, Ohio or Los Angeles, California – or phone the nearest Goodyear Mechanical Rubber Goods Distributor.



THE GREATEST NAME IN RUBBER

GOODYEAR

Compass—T. M. The Goodyear Tire & Rubber Company

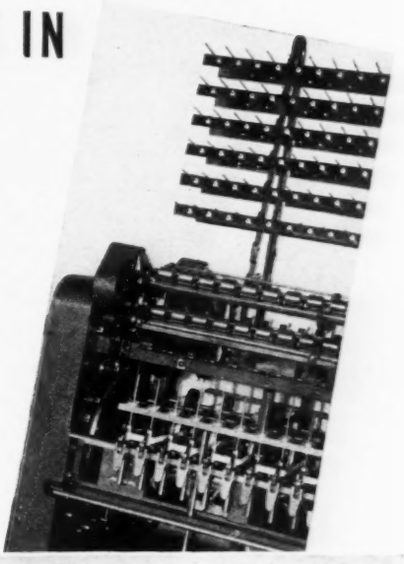
APRIL
21 to 24

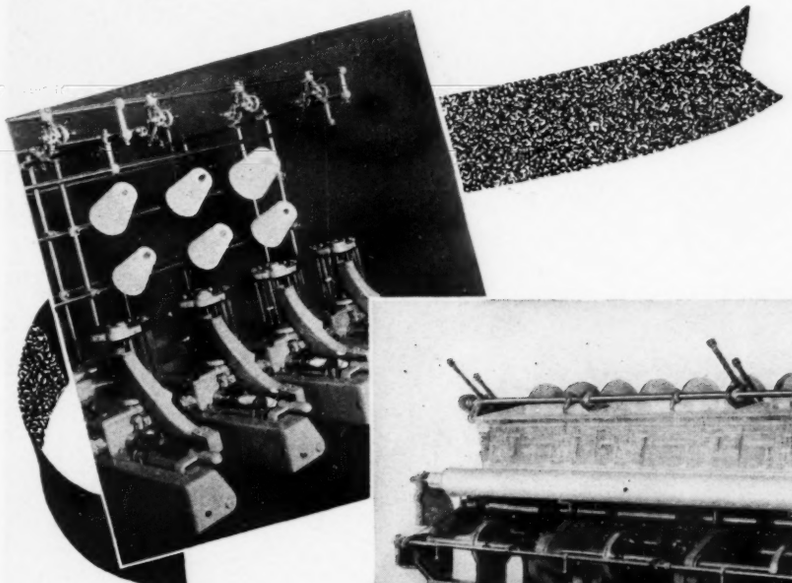
AT THE 37th KNITTING ARTS EXHIBITION

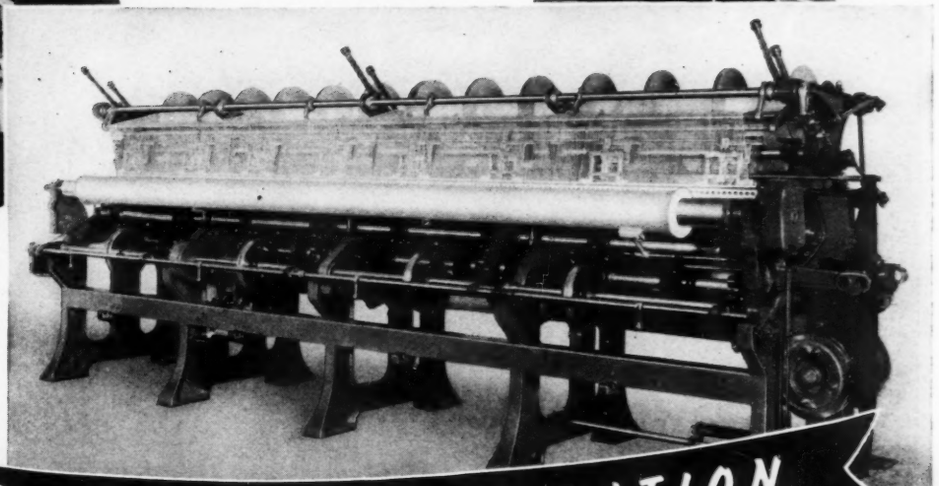
COMMERCIAL MUSEUM, PHILADELPHIA

INSPECT THE LATEST DEVELOPMENTS IN

- NOVELTY YARN TWISTERS
- AUTOMATIC FILLING BOBBIN WINDERS
- HIGH SPEED WARP KNITTING MACHINES





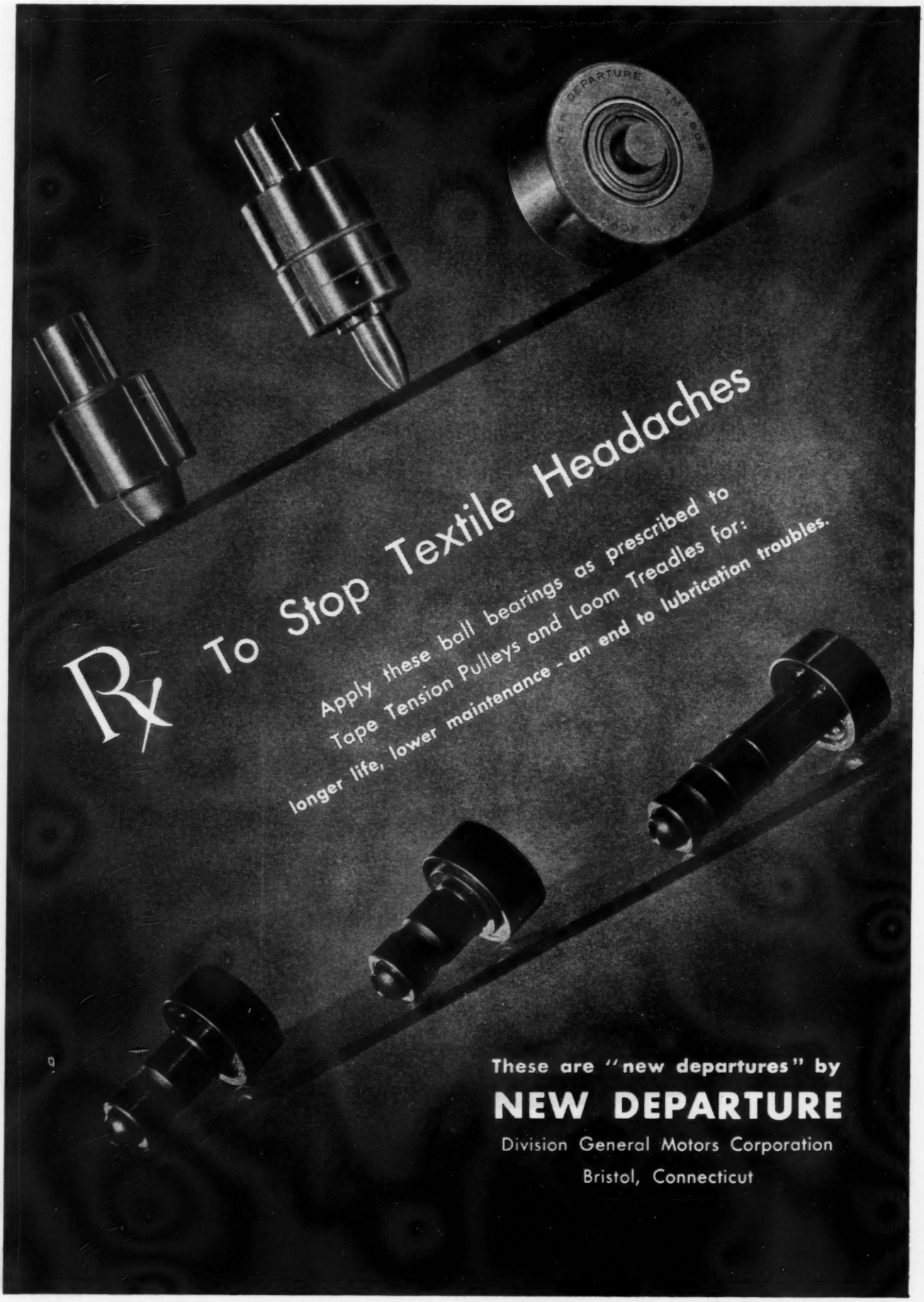


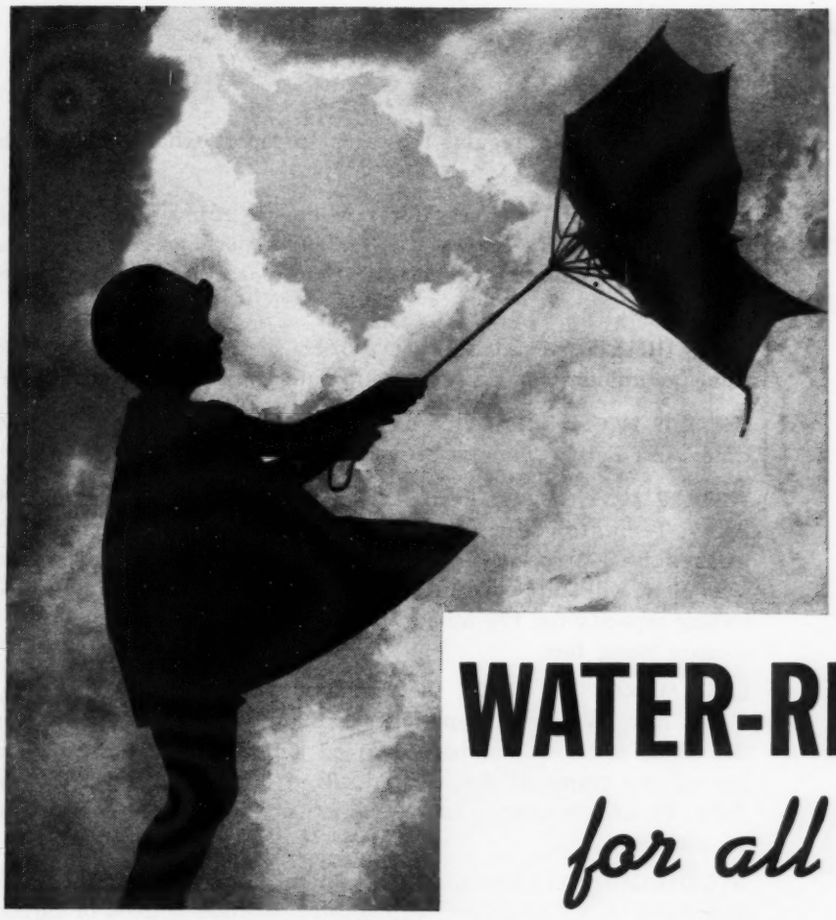
IN PRODUCTIVE OPERATION

WHITIN MACHINE WORKS

★ WHITINSVILLE, MASS., U. S. A. ★

CHARLOTTE, N. C. ATLANTA, GA.


℞ To Stop Textile Headaches
Apply these ball bearings as prescribed to
Tape Tension Pulleys and Loom Treadles for:
longer life, lower maintenance - an end to lubrication troubles.
These are "new departures" by
NEW DEPARTURE
Division General Motors Corporation
Bristol, Connecticut



WATER-REPELLENTS *for all Fabrics*

High efficiency, real economy with these two outstanding types of water-repellents for *all* types of textile fibres: cotton, wool, silk, rayon, cellulose acetate, linen, etc. Both Luposec and Acetate of Alumina are adaptable to *your* processing methods. Both are genuinely stable.

LUPOSEC

A successful *one-bath* repellent that eliminates repeated treatment of fabrics—in baths not easily controlled. Luposec is recognized as perfect for finer fabrics. It gives unusual smoothness and suppleness of hand.

Luposec has minimum effect on dyed shades and actually leaves white goods colorless and odorless. Makes colors faster to rubbing, sunlight, washing, etc. Luposec can be applied in either continuous or batch type machines—it requires no special equipment. Mixes quickly and thoroughly with gelatins, gums and other finishing compounds.

ACETATE OF ALUMINA

Jacques Wolf Acetate of Alumina is exclusively processed—widely used for waterproofing Army and Navy supplies. Exceptionally high in aluminum content—7% Al_2O_3. Low in free acid content. Free of sulphates and sediment.

LUPOSEC · ACETATE *of* ALUMINA

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga. Midwestern Distributor: Bradley F. Marthens, Chicago, Ill.

ALUMINUM, DEFENSE, AND YOU

ALCOA

1

WE INTERRUPT our regular messages to report what's what with aluminum.

AT THE MOMENT delivery for civilian use must make way for defense. Everybody knows the reason. Defense requires and is using more aluminum per month than peacetime America ever consumed.

NEVERTHELESS, we intend that no one shall have to forego the things aluminum can do best one minute longer than we can help.

THERE IS NO SHORTAGE of bauxite, nor of anything else, except time. And Father Time is being given the race of his life.

WE ARE MOVING, for example, 35,000 yards of earth a day at Alcoa, Tenn., to get 50 acres under a single roof by September. It will require 193 carloads of roofing felt. Some of the operations in that plant will start even before the walls are up. That's an annual rolling capacity for 120 million pounds of high strength alloy sheet coming along fast.

LAST MARCH WE STUCK the first shovel in a cow pasture near Vancouver, Wash. In September a 30 million pound plant was delivering metal. It has been doubled, already. A third 30 million pound unit starts delivering in April; a fourth in May; a fifth in June. From cow pasture to 150 million pounds annual capacity in 15 months.

A SIDELIGHT: To make that 150 million pounds of aluminum, we first have to build factories to make 120 million pounds of carbon electrodes. We have to obtain the equipment (transformers, rectifiers, and the like) to feed 162,500 kw. of electricity into the reduction furnaces. This is a generating capacity equal to that of the state of Delaware plus twice that of Mississippi.

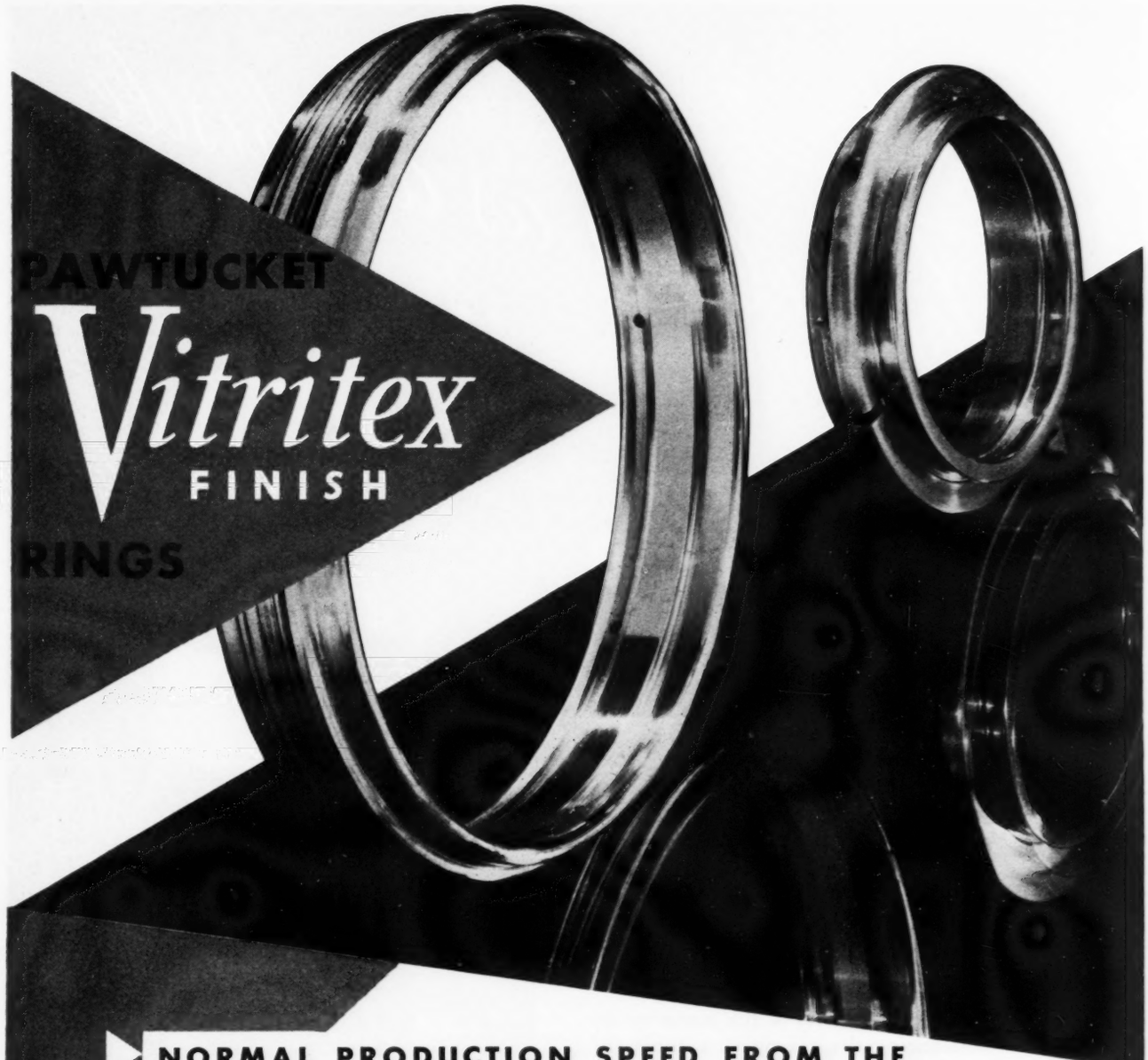
WHAT OF TOTAL PRODUCTION? In addition to Vancouver, further installations are being made at other of our plants, so that in less than a year their total capacity will be more than double that of 1939, when 327 million pounds were produced.

IN THE VERY MIDST of this demand we have lowered the price of aluminum ingot 15%. We state, without reservation, our hope that the price can be still further reduced.

DEFENSE APPLICATIONS use aluminum for exactly the same reasons you do. Defense priorities on aluminum simply say that there are some fundamental things that aluminum does supremely well. It will do them still better as important lessons in production, fabrication, and application are learned from every additional pound being produced and used.

YOU, SIR, have been using aluminum in many forms, for many different purposes. It is not easy nor convenient to have to substitute other materials temporarily. We want you to know that we intend to make this hardship as short-lived as possible. Your aluminum is on the way. It is a promise.

ALUMINUM COMPANY OF AMERICA



NORMAL PRODUCTION SPEED FROM THE MOMENT THEY ARE INSTALLED . . .

Pawtucket Vitritex Rings do not have to go through an expensive, traveler-wearing, breaking-in period when they're new. From the moment they are installed your frames operate at their normal speed and efficiency.

Pawtucket Rings are known for their precision workmanship, durable glass-smooth finish, easy starting qualities. Travelers last longer and run smoother and better on these rings . . . a fact which many spinning-room overseers have found from experience.

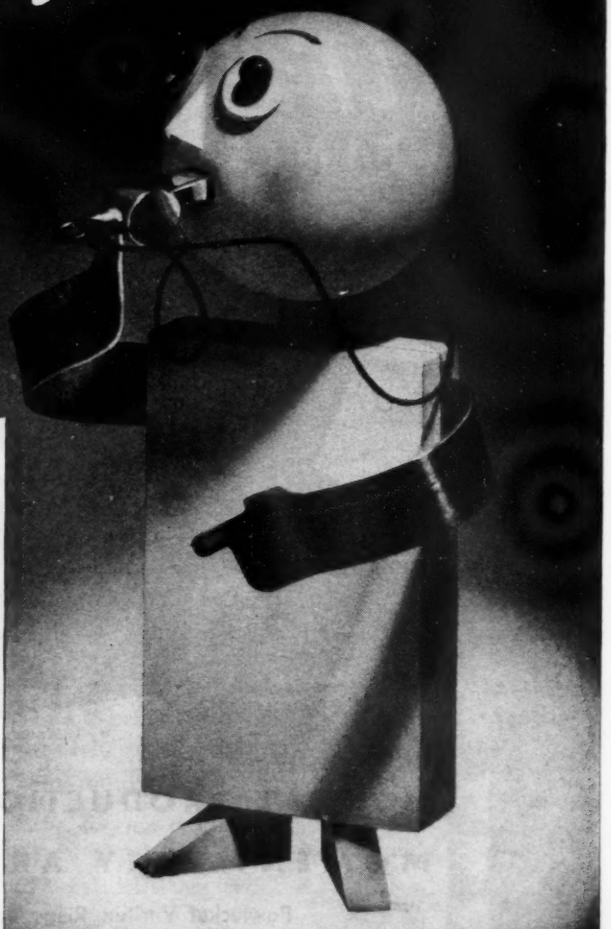
We will be glad to arrange a trial installation . . . or furnish without cost or obligation sufficient samples for your own test purposes.

PAWTUCKET SPINNING RING COMPANY
(Subsidiary of Saco-Lowell Shops)
CENTRAL FALLS, RHODE ISLAND

GIVE YOUR TRAVELERS A "TURN FOR THE BETTER" . . . . INSTALL PAWTUCKET VITRITEX RINGS

Tops clean as a whistle

WHEN YOU USE MODINAL* D



IN THE dyebath for worsted tops this new, double-strength fatty alcohol sulfate performs several important functions.

Your tops will be cleaner and free from lime soap precipitates. They will take the dye more uniformly, and require little or no rinsing.

The effectiveness of the scouring action during the dyeing cuts down the amount of scouring materials needed in the backwasher.

Because of its affinity for wool, MODINAL D greatly improves the spinning qualities of fine wools.

May we send you complete information or have a technical man call to explain the many money-saving advantages of this highly efficient detergent?

*"Modinal" is the trade mark used by the Gardinol Corporation to designate a group of its fatty alcohol sulfates.

GARDINOL CORPORATION · General Offices, Wilmington, Delaware

SALES AGENTS

Procter & Gamble, Cincinnati, Ohio

E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware

THIS IS NO. 26 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

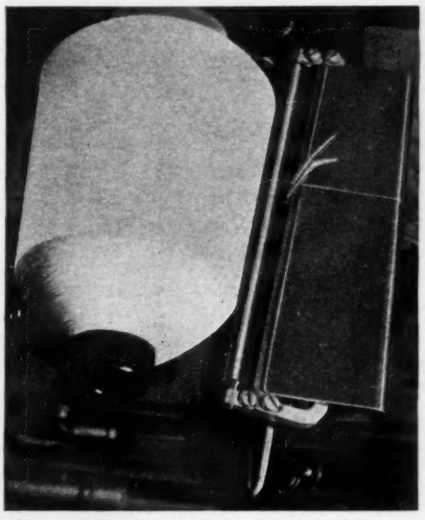
WINDING PINEAPPLE CONES OF NYLON (No. 50 Winder)

The mills which are now winding Nylon have found that the requirements are very different from those they experienced with silk. Some of these mills, by experimenting, have been able to overcome difficulties and do successful winding. For benefit of other mills with less experience, we offer suggestions for improving quality of cones.

Speed, Winds, Traverse Lengths

Maximum spindle speed should be 1200-1250 R.P.M. At higher speeds than this, there will be too much tension on the yarn to produce satisfactory packages. Best results are obtained with 4 winds although 3¼ winds have proved satisfactory.

The Pineapple Cone Attachment used for Nylon has a replaceable builder cam. Builder Cam #6 is used for Pineapple Cones with a starting traverse from 5½" to 6" (Builder Cam #5 for starting traverses from 5" to 5½"). The 5" Traverse Cam is used for all yarn traverses from 5" to 6".

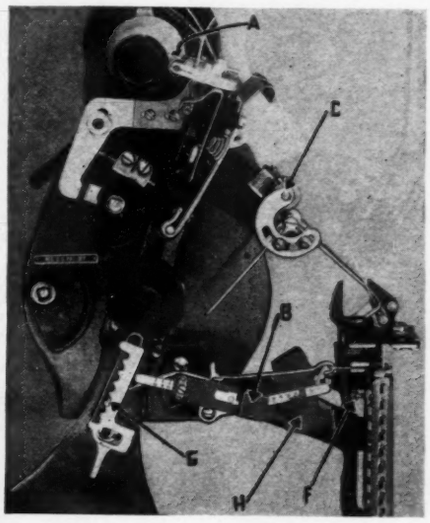


At the start of winding, it will help to move the Traverse Frame Back away from the package. The traverse will be short, but this will prevent yarn from lapping around the Roller Bail. After a few layers have been wound, the Bail can be moved up to contact the cone and obtain the full length of traverse.

Tension

When a Roller Bail (A) is used with the Pineapple Cone Attachment, Nylon can be wound with less tension and more pressure. Proper control of tension and pressure is important for quality winding.

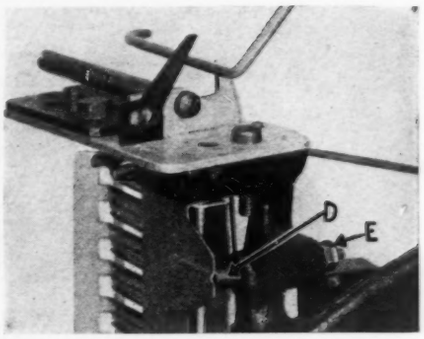
Only about 4 or 6 grams of tension are desirable at the start of winding, and *all* tension should be released at the finish except 2 to 4 grams produced by frictional contact. If, however, the yarn being wound has very low twist, the tension at the start should be about 4 grams and, at the finish, about 2 to 3 grams.



Tension is measured by means of a Tensometer between the Breakage Lever and Traverse Frame Back.

The proper control of tension is obtained by attaching the Auxiliary Tension Lever (B) between positions 5 and 6 on the Differential Tension Lever.

If, after making this setting, the amount of tension is too great, it will be necessary to take the weight of the Breakage Lever off the yarn by means of the Breakage Lever Balance (C). This can be done by positioning the Balance Weight at the top so that it nearly counterbalances the Breakage Lever, but still will allow it to drop when an end breaks. When the Balance Weight swings over and beyond dead center, its weight will force the Stopping Lever against the Wheel, quickly stopping the machine.



It is also important to set the Anti-Wear Tension so that the grids will not be allowed to open too far. This is done by twisting three ends together and pulling them tight, between the grids. The Closer (D) is set by means of the check nuts (E) to limit the maximum opening.

The Tension Stop (F) is set, with the yarn running, so that the movable grid will be prevented from passing too far through the stationary grid fingers. It should not actually touch the grid, for that would destroy the differential tension feature.

Pressure

Pressure should be heavy at the start of winding — about 12 to 14 ounces when the Roller Bail is used. At the finish of a 9 to 12 ounce cone, pressure should be about 4 to 6 ounces. This will keep the Bail revolving and help to produce good cones.

Pressure is measured with a Pressure Gauge hooked into the top of the Traverse Frame Back.

The Differential Pressure Connecting Rod (G) is set in the fifth hole from the top of the Adjuster. The 5-ounce Pressure Weight (H) provides the proper amount of initial pressure when set between 6 and 7 on the Pressure Lever.

At the start of winding, the levers should be set at about 15 degrees above horizontal for proper release of tension and pressure.

If after these adjustments the proper release of pressure is not obtained, it may be that the Dog is dragging in the Segment, which will create pressure that cannot be released. There should be only enough tension on the Dog to keep it in contact with the Segment. When the Roller Bail is used, it will do no harm if the Traverse Frame Back is allowed to creep toward the package.

The finished cone should have a Densometer reading between 40 and 50.

See our General Catalog in TEXTILE YEARBOOK.

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

*Reg. U. S. Pat. Off.

For Quality
YOU MUST USE A
Quality
HEDDLE
OF PROPER
DESIGN
QUALITY LOOM HARNESS EQUIPMENT
Stehedco
FLAT STEEL HEDDLES
ARE KNOWN THE WORLD
OVER FOR THEIR . . . .
Super Quality
and adaptability for any fabric made of
cotton, rayon, silk, wool, worsted, straw,
cellophane, paper, wire, fibre glass, etc.
BRANCH OFFICES
ALL OVER
THE WORLD
Steel Heddle Mfg. Co.
Manufacturers of Superior
FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—
SOUTHERN SHUTTLES—LOOM HARNESS ACCESSORIES
2100 W. Allegheny Avenue Philadelphia, Pa.
FIELD ENGINEERS
IN
EVERY DISTRICT

ADVENTURES IN ARIDYE—NO. 2

Aridye Paints a New Color Picture

ARIDYE Textile Colors add new brightness to the textile printer's palette. Brilliant blues, greens and yellows are features of the Aridye color line.

On Aridye prints the definition between colors is sharp and clean—practically no smudging or flushing at the borders.

Aridye* Colors can be printed along with other types of colors with grand success. They are being used in small area patterns and in blotches when the color of the blotch is not too deep.

Leading finishers appreciate the advantages which Aridye Textile Colors bring to dress fabrics, shirtings, flannelettes and most other fabrics, including synthetics.

WHAT IS ARIDYE? Aridye Textile Colors consist of permanent and insoluble pigments suspended in an organic vehicle. This vehicle contains a water insoluble binder which adheres to the cloth and anchors the color permanently to the fibres.

The selection of the right pigment, the exact form of the pigment, the method of dispersing, and the tenacity of the binder—these have all been determined by thoroughgoing research to produce Colors of maximum fastness.

The Aridye Clear, used to extend the Colors, has been given as much time and careful Laboratory thought as have the Colors themselves.

Research into many methods of mixing and applying has evolved the best plant practice. Those many finishers who have become Aridye enthusiasts adhere rigorously to the simple Aridye Methods. Aridye Corporation, Fair Lawn, New Jersey.

ARIDYE BRINGS YOU THESE PRODUCTION ADVANTAGES

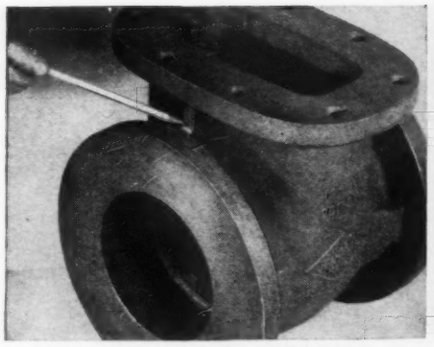
NO CHEMICAL AFTERTREATMENT • PRINTS IN FINAL COLORS • RAPID COLOR MATCHING
COLORS SHIPPED READY FOR USE • FEWER SECONDS

Aridye
TEXTILE COLORS

FAST TO WASHING
•
EXCEPTIONALLY FAST TO SUNLIGHT
•
NEW BRIGHT COLORS
•
UNUSUAL UNIFORMITY OF SHADE
•
ENGRAVINGS EXACTLY REPRODUCED

**Trade Mark Reg. U. S. Pat. Off.*

You Get All Aridye Advantages by Using Aridye Colors Reduced with Aridye Clear and Applied by the Aridye Methods



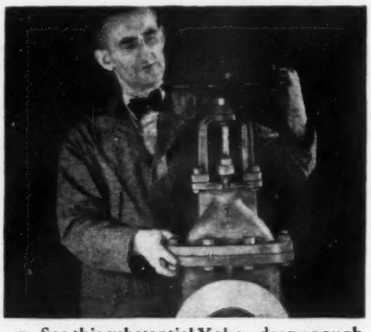
1 Look at that heavy reinforcing rib—just one of many extra strength features you get in this liberally proportioned, semi steel body—average tensile strength 35,000 per sq. in.—which has six blind bosses for by-passes and drains.

2 Now note the *depth* and generous proportions of this bonnet—to allow the wedge to lift entirely out of the line of flow.

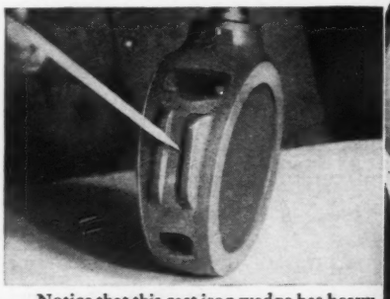
3 Eight of these sturdy *through bolts* on our 6" valve make it an easy job to remove the bonnet for maintenance or cleaning. No trouble with broken or corroded studs.

Don't Guess —

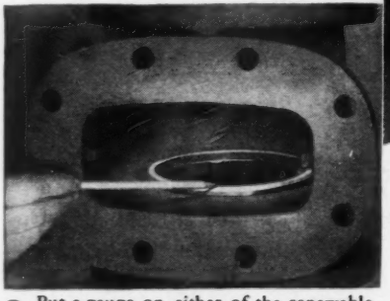
look inside this Iron Gate before you buy!



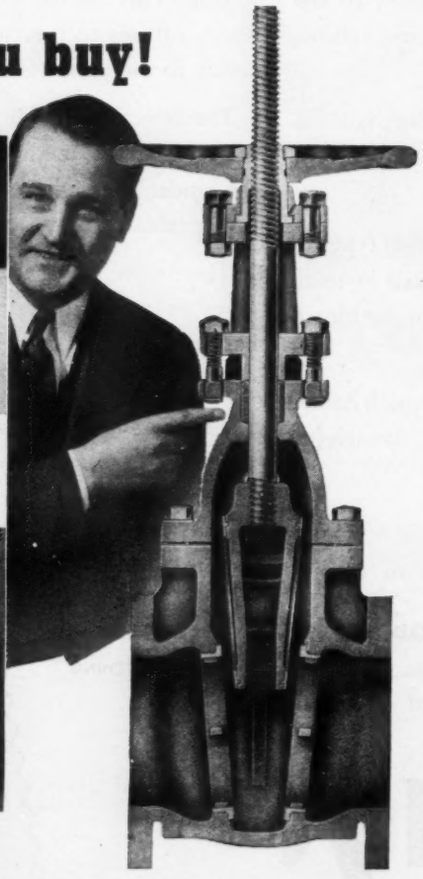
4 See this substantial Yoke—deep enough to prevent spindle threads from entering the packing chamber when wedge is completely lowered.



5 Notice that this cast iron wedge has heavy bronze face rings—*rolled in*, then machined to gauge. Also—deep guide channels that insure alignment and minimize chatter when valve is partly open.



6 Put a gauge on either of the renewable bronze seat rings to check the watch-movement precision with which they are made—and screwed into body in all sizes.



Improvements in Gate Valve design have created many differences that you should know about . . . Check over the features of this O. S. & Y.—I.B.B.M. Gate—JENKINS FIG. 651.

It will pay you to get the facts about Jenkins Iron Body Gate Valves. Compare the improved design, construction and convenience features shown in the photos. Then consult the clear-cut section view that shows how Jenkins gives you *reserve* strength at every possible point.

For example—the extra length spindle with deep, liberal threading—of correct pitch and lead for a practical balance between speed and ease of operation. Notice the husky bronze yoke sleeve with a maximum of threads engaging the spindle—for longer, trouble-free service. Also, the heavy cast iron packing gland—and many other features to which no photos would do justice.

So why not inspect the valve itself. See why Jenkins means *top-quality*. Yet they *cost no more*. Prompt delivery from stock at reliable supply houses everywhere.

JENKINS BROS., BRIDGEPORT, CONN.

LOOK TO *Jenkins* FOR THE BEST IN VALVE DESIGN

A wide range of consistencies available for any method of application or operating condition.

YEARS of exhaustive research by Gulf's technologists have produced two superior lines of lubricating greases for ball and roller bearings — greases which provide a "second wind" for today's hard pressed equipment.

One, Gulf Anti-Friction Grease, is recommended for heavy duty service. The other, Gulf Precision Grease, is recommended for lighter duty and higher speeds. Both have a high melting point and are specially prepared for greatest resistance to oxidation and separation.

Gulf's newly developed method of compounding, employing special high pressure kettles and mixing methods, produces these greases with a relatively smooth, non-fibrous texture, which gives a true picture of their consistency.

Both of these superior new lubricants are available in a standardized consistency range in line with the National Lubricating Grease Institute consistency recommendations which went into effect March 1, 1941. Write today for complete information.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation - Gulf Refining Company C
3800 Gulf Building, Pittsburgh, Pa.

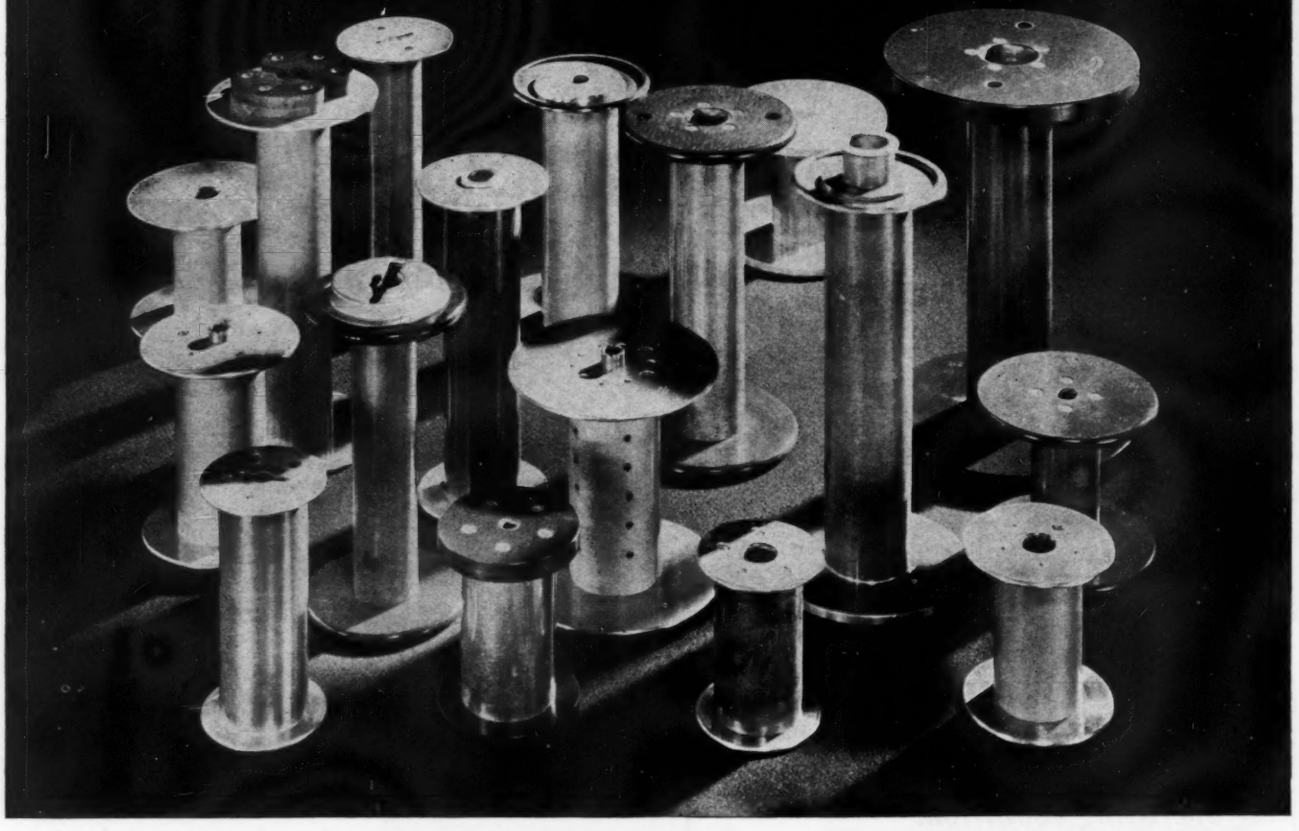
Please send me without obligation complete information about your new long life greases for anti-friction bearings.

Name.....
Company.....
Address.....

MAZLO

MAGNESIUM ALLOYS

THE LAST WORD IN LIGHTNESS



Each with a heart of Magnesium tubing

THESE bobbins employ lightweight MAZLO Magnesium tubing for the barrels, in place of the wood and composition formerly used; flanges are of various materials. They weigh no more, and often less, than the old style bobbins.

Accurately balanced by the manufacturer, these bobbins stay that way. The result is continued smooth operation at high speeds, less vibration and, therefore, longer bearing life for spinning and twisting machines. With Magnesium barrels, there's no swelling or splintering to destroy the usefulness of these bobbins.

MAZLO Magnesium Alloys are produced in all commercial forms. Sales Agent for MAZLO Magnesium Alloys: Aluminum Company of America, 1704 Gulf Building, Pittsburgh, Pennsylvania.

MAZLO
REG. U.S. PAT. OFF.

AMERICAN MAGNESIUM CORPORATION

DEFENSE COMES FIRST

To meet the needs of National Defense, the American Magnesium Corporation, now a wholly owned subsidiary of Aluminum Company of America, is increasing its manufacturing facilities at a rate many times that required by normal peace-time markets. When the emergency is past there will be an abundance of the fabricated forms of magnesium alloys available for industrial uses.

Meanwhile, magnesium is helping to meet the national emergency.

yarn dyed fabrics

THEIR INDIVIDUALITY COMMANDS A BETTER PRICE

If your product looks just like a hundred other products, how can you hope to make a decent profit on it? To make your product a vehicle for YOUR ORIGINALITY:—that is the problem.

The answer is YARN DYED fabrics. They permit a VARIETY in color and design from which the most exacting can satisfy their INDIVIDUAL tastes. And since the deciding factor is color and design which only YOU offer, you can get your price and a fair profit.

Make your fabrics with Franklin Process Colored Yarns and a fair profit is doubly assured by the helpful suggestions and the prompt and efficient service which Franklin Process volume make possible . . . FRANKLIN PROCESS . . . PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA . . . New York Rep., 40 Worth Street; Chicago Rep., 100 W. Monroe Street.

Franklin Process

★LARGEST PACKAGE DYERS IN THE WORLD

the ANTI-FUME FINISH

ARIPEL-F

FOR ACETATE RAYON FABRICS

A DOUBLE-ACTION finish, ARIPEL F effectively combines anti-fume and finishing actions that not only ***increase the gas-resisting properties*** of the color, but also ***impart a soft, smooth full-feeling finish*** to acetate rayon fabrics, without the use of any other finishing agents.

Dyed fabrics treated with ARIPEL F *show good resistance to combustion gases when subjected to a standard gas chamber test for 40 hours.*

Since it does not affect the light fastness of viscose rayons or cottons in direct dyeings, ARIPEL F is therefore highly desirable for processing mixed fabrics.

ARKANSAS CO. INC.

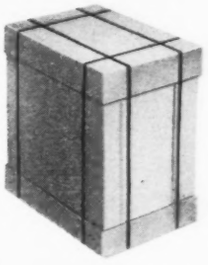
Manufacturers of Industrial Chemicals for over 35 Years

NEWARK NEW JERSEY

Gaylord Service finds the answer!

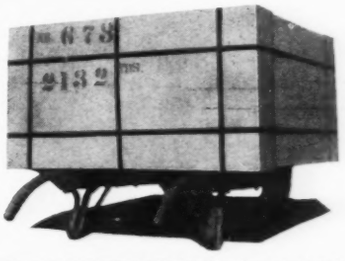
. . . LOWER SHIPPING COSTS FOR MANY MILLS . . .

Better, more economical ways to pack, handle and ship textile products are always being studied at Gaylord. And an important part of this service is the help and advice of experienced Gaylord-trained packaging specialists. They have already saved thousands of dollars for leading manufacturers.



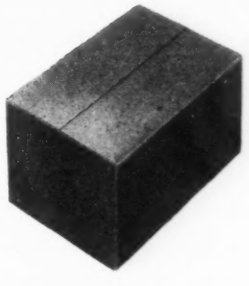
. . . REDUCED SHIPPING LOSSES FOR OTHERS . . .

Equally important, Gaylord designers do not stop with meeting standard specifications for strength and toughness. They build an *extra* margin of safety into every Gaylord container . . . a factor which has helped assure safe arrival and shaved shipping losses to a minimum.



. . . INCREASED GOODWILL FOR ALL . . .

And, perhaps, most important of all . . . is the increased goodwill generated for the mills whose products are shipped in containers produced by Gaylord service. Customers are quick to appreciate lower shipping costs, easier, faster handling and safe arrival of their orders.



Gaylord Boxes

CORRUGATED AND SOLID FIBRE
Also Gaylord Folding Cartons . . . Grocery Bags and Sacks . . . Kraft and Specialties

IT PAYS TO CHECK WITH GAYLORD!

Perhaps a Gaylord study of your shipping methods will develop a new, more efficient way to cut your shipping costs, reduce your damage claims and build goodwill. A phone call or letter will bring an experienced Gaylord shipping specialist to discuss the possibilities with you. No obligation.

GAYLORD CONTAINER CORPORATION
General Offices: SAINT LOUIS

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To Soften Water Effectively Without Precipitation Use -

QUADRAFOS*

(SODIUM TETRA PHOSPHATE—$Na_6 P_4 O_{13}$)

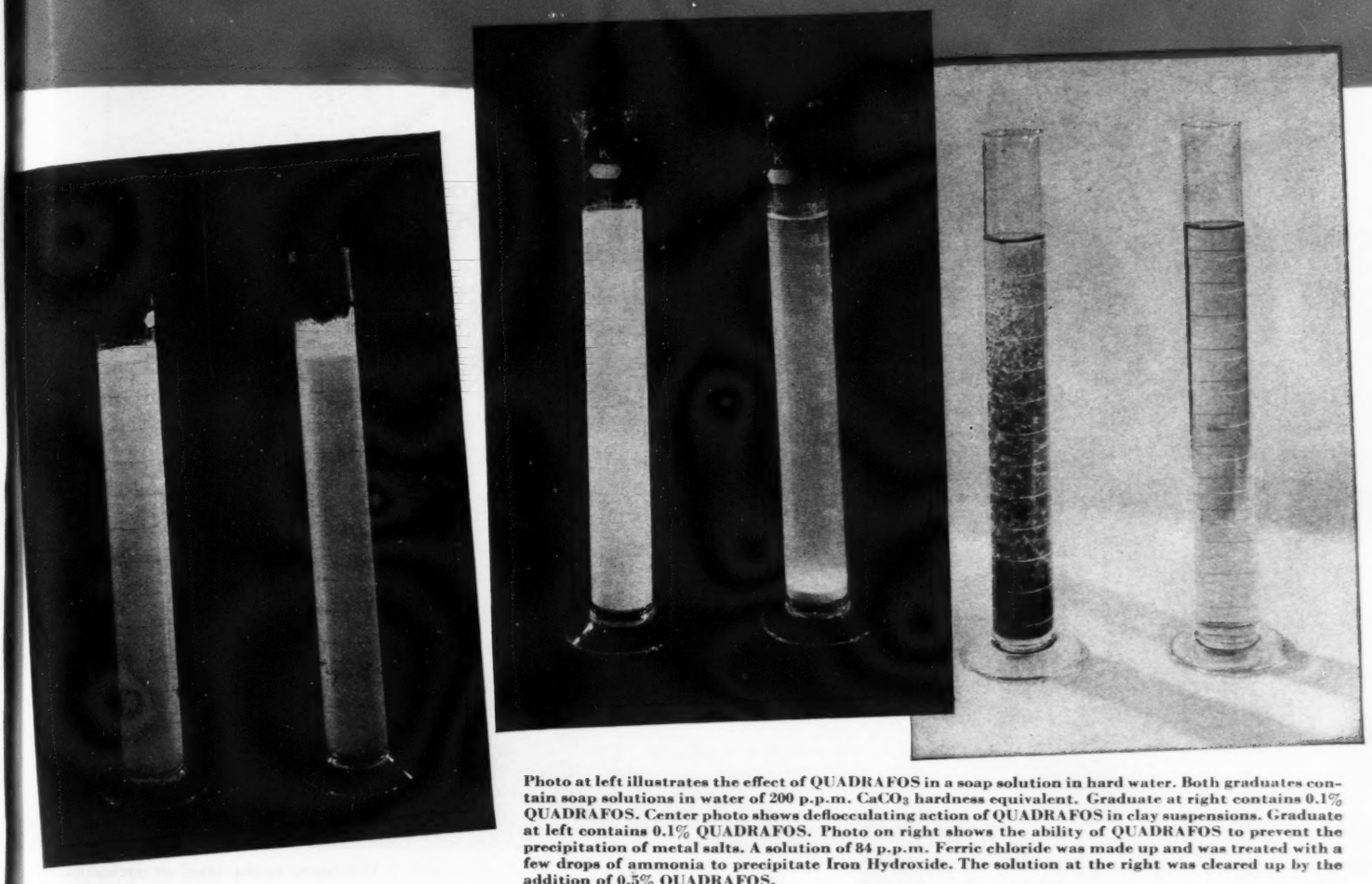

Photo at left illustrates the effect of QUADRAFOS in a soap solution in hard water. Both graduates contain soap solutions in water of 200 p.p.m. $CaCO_3$ hardness equivalent. Graduate at right contains 0.1% QUADRAFOS. Center photo shows deflocculating action of QUADRAFOS in clay suspensions. Graduate at left contains 0.1% QUADRAFOS. Photo on right shows the ability of QUADRAFOS to prevent the precipitation of metal salts. A solution of 84 p.p.m. Ferric chloride was made up and was treated with a few drops of ammonia to precipitate Iron Hydroxide. The solution at the right was cleared up by the addition of 0.5% QUADRAFOS.

QUADRAFOS is a carefully balanced anhydrous polyphosphate. It is rapidly increasing in industrial use because of its ability to soften water effectively without precipitation.

Besides preventing the precipitation of calcium and magnesium compounds QUADRAFOS is remarkably effective in holding the ions of many other elements in solution. Iron that contributes to operation difficulties when introduced with natural waters or as an impurity in other chemical raw materials may be sequestered and rendered inactive with QUADRAFOS. It also sequesters and renders inactive nickel chromium, lead and many other metallic ions.

A booklet on the advantages and uses of QUADRAFOS is available on request. Write for your copy and it will be sent to you promptly, without obligation.

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American Cyanamid
& CHEMICAL CORPORATION

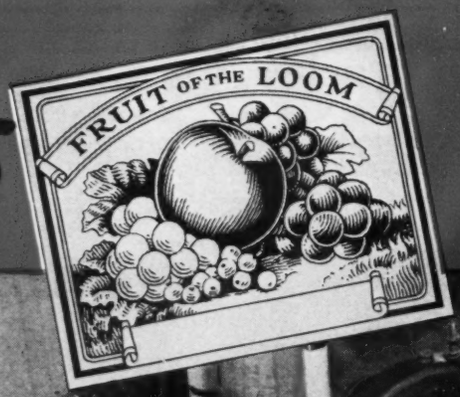
A Unit of American Cyanamid Company

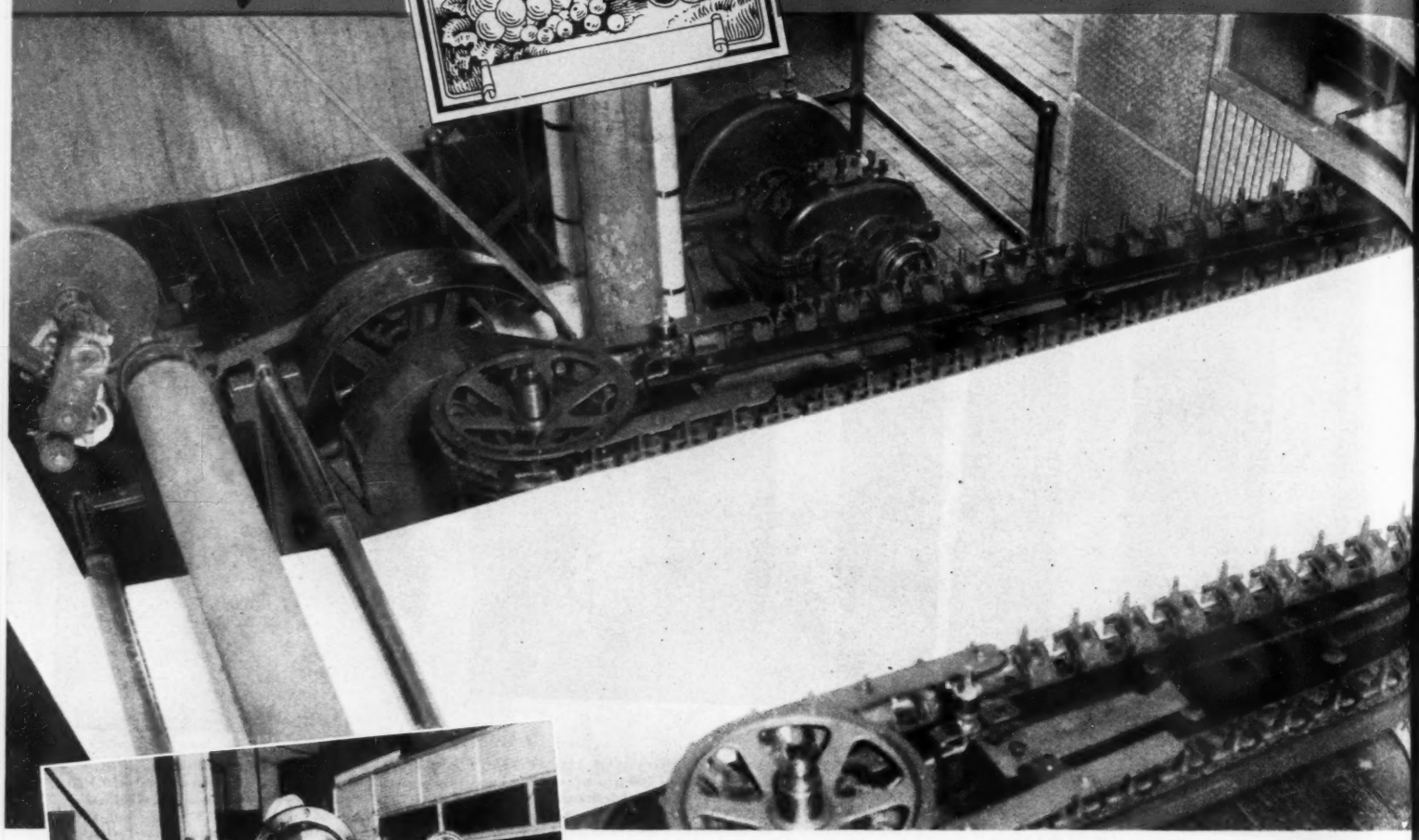
30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

*Reg. U. S. Patent Office

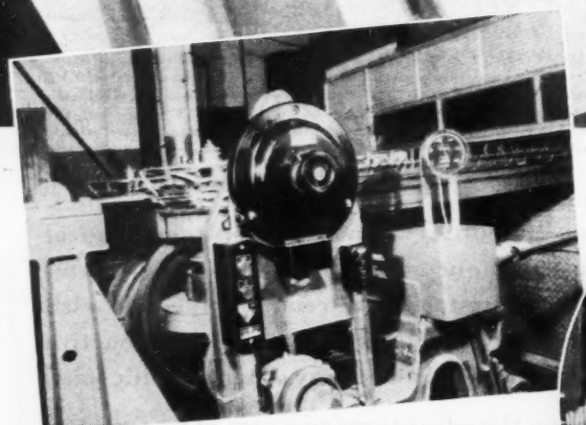
"WILL PAY FOR ITSELF

Says About Its

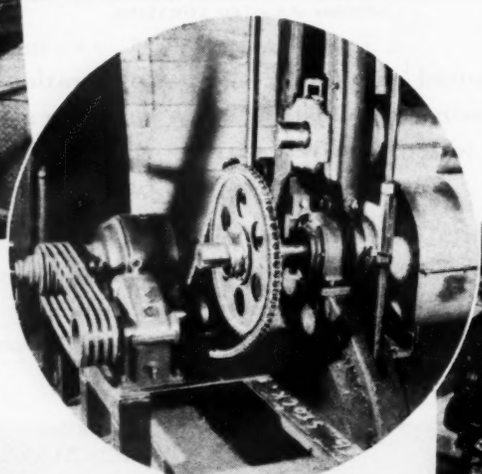




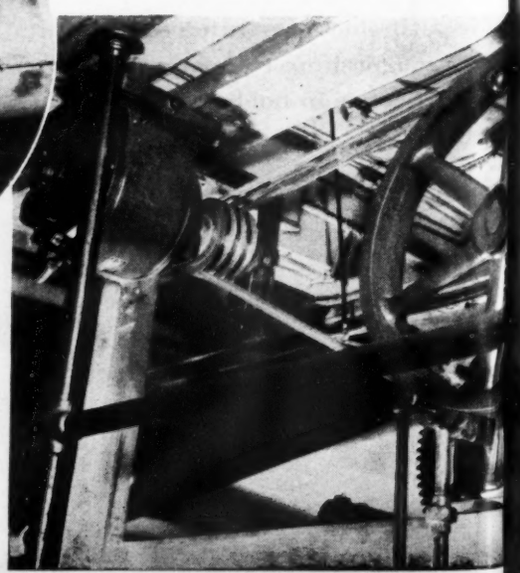
This tenter is the lead, or pace-setting, unit of a range comprised of units located on several floors. The turbine (upper middle of the picture) drives both the tenter and the generator, at the right of the turbine. Pontiac Finishing Plant, Pontiac, R. I.



At this master-control station the operator dials the desired running speed on the rheostat, and pushes Start, Stop, Slow, Fast, or Safe-Run buttons for all the operating functions.



No danger of overpowering fabric in process, or of driving too slow to keep up with cloth speed. Motor characteristics are such that tension on the cloth is kept constantly within safe limits. This is the drive for the dry mangle unit.



The first follower drive-unit in range is this ceiling-mounted splashproof G-E motor driving the first set of dry cans.

IN TWO YEARS"

New G-E Turbine-Electric Range-Drive

Because of its many features that contribute to uninterrupted production, to ease of operation, and to uniform results, the new turbine-electric range-drive of Fruit of the Loom, Inc., is expected to pay for itself in two years or less.

Here are some of the advantages Fruit of the Loom has reported to us:

1. Flexibility — More units can be added or subtracted from the range. For example, since installation, a doubler unit has been added to the original arrangement.

2. Simplicity — Incorporates control devices with which operators are already familiar. No compensating gates are required. A master station provides centralized control.

3. Low maintenance — Requires no more time out and expense for maintenance than the simplest of general-purpose motor drives.

4. Smooth and fast acceleration — Goes quickly up to running speed "without a hitch"—easy on goods in process.

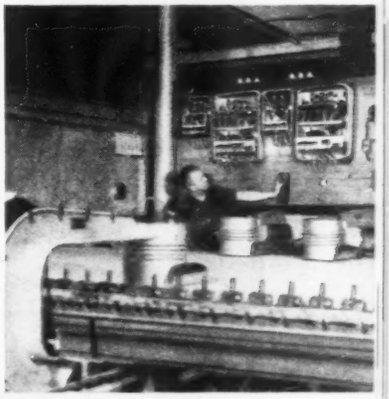
5. Wide speed range — Operates evenly at threading speeds and holds any other speed desired—up to the maximum for the drive.

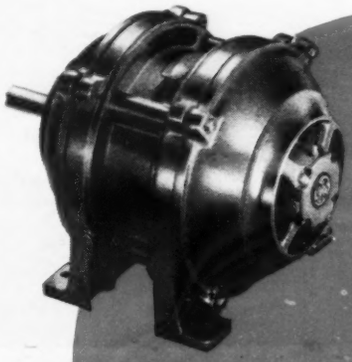
These operating advantages can be capitalized because they make possible savings, faster production, and uniform quality of product. Then, too, there's the double use of steam. All the advantages together make it possible to return the low first cost of turbine-electric drive in a couple years.

Let Us Work with You

In addition to turbine-electric range-drive, General Electric can furnish these other types: Type BTA (a-c) motor range-drive, and d-c range-drives of both constant-voltage and adjustable-voltage types. This enables our engineers to recommend the type of drive which best meets the operating conditions and requirements of an individual plant. General Electric Co., Schenectady, N. Y.

COMBINATION STARTER
You can get this starter with our vise-type fuse holders—in addition to its other advantages of protection to operator and machine.





AUTOMATIC SKEW DETECTOR
Of more than 200 women canvassed 86 per cent regarded skewed, or crooked cloth as a problem. Our unique control system checks for skew on a wide range of weaves and cloth, and automatically operates the mechanism to remove skew.

USE TEXTILE MOTORS THROUGHOUT
Originally developed for spinning-frame drive, the G-E textile motor has proved outstanding in that use, and in other locations where lint or fly would clog an ordinary motor.

PORTABLE TROUBLE SHOOTER
By simply clamping it around a conductor, this hook-on voltammeter can tell the electrical man whether there is a power leak or an overload.

GENERAL ELECTRIC

661-10-8623

HORSE (power) CAVALRY!

Suppose someone who lived forty or fifty years ago—say one of the founders of Mathieson—could pay us a visit today. And suppose we could show him the sights of 1941—what do you think would interest the old gentleman most? If he were one of the pioneers who founded Mathieson, we believe he would be most interested in the revolutionary changes wrought by chemical progress and in the part his successors have played in building the present-day America. We would go about telling him the story as we tell it in this series of advertisements.

● "Boots and saddles" is pretty much a thing of the past in today's Army, Mr. M.! Instead, it's—"Turn 'em Over!"—and thousands of horsepower spring to life, waiting to move the tanks and trucks and combat cars of today's mechanized cavalry into action. And, of course, the fodder for these thousands of "horses" is high-octane gasoline, product of the great American petroleum industry.

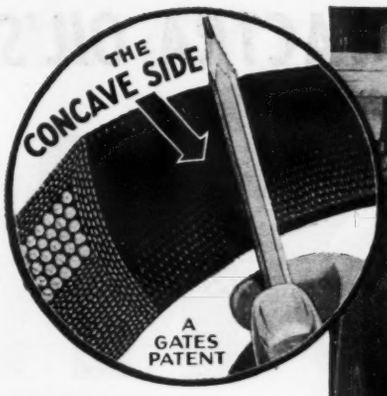
In the refining end of this vast industry Mathieson Chemicals play an important part—caustic soda and soda ash as petroleum treating reagents, bicarbonate of soda for fire-foam systems, anhydrous ammonia for refrigeration and for combatting corrosion in refinery equipment, chlorine and hypochlorite for sweetening distillates. Then, too, the new mechanized "horses" of the Army must have tires, glass, oil and grease, plastic and metal parts, lacquer finishes and lamp filaments. In the manufacture or processing of all of these materials you will find one or more Mathieson Chemicals.

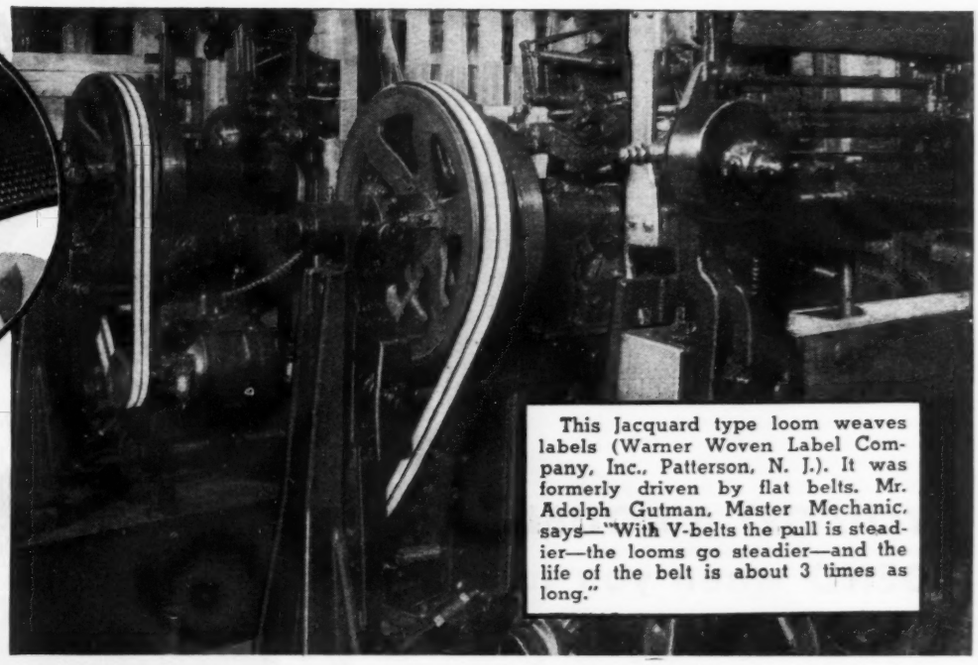
But helping to "keep 'em turning over" is not a new role for Mathieson Chemicals—it's a job they've been doing in the chemical-consuming industries of America for nearly half a century.

MATHIESON CHEMICALS

SODA ASH . . . CAUSTIC SODA . . . BICARBONATE OF SODA . . . LIQUID CHLORINE . . . BLEACHING POWDER . . . HTH PRODUCTS . . . AMMONIA, ANHYDROUS and AQUA . . . FUSED ALKALI PRODUCTS . . . SYNTHETIC SALT CAKE . . . DRY ICE . . . CARBONIC GAS . . . SODIUM CHLORITE PRODUCTS

THE MATHIESON ALKALI WORKS (INC.)
60 E. 42ND STREET, NEW YORK, N. Y.





This Jacquard type loom weaves labels (Warner Woven Label Company, Inc., Patterson, N. J.). It was formerly driven by flat belts. Mr. Adolph Gutman, Master Mechanic, says—"With V-belts the pull is steadier—the looms go steadier—and the life of the belt is about 3 times as long."

Here's an Easy Way to *See for* YOURSELF

HOW THE CONCAVE SIDE *Saves Money!*

What Happens When a V-Belt Bends

FIG. 1

FIG. 2

If you use V-belts you cannot spend two minutes more profitably than in making this simple test:—

Pick up *any* V-belt that is built with *straight* sides. Bend it as it bends in going around a pulley. You will see that the top of the belt grows *narrower,* the bottom *wider*—and the sides of the belt *bulge out.* The straight-sided belt, when bent, takes the shape shown in figure 1, at left. Clearly, this shape does not fit the sheave groove.

Now make the same test with the belt that is built with the patented concave side. As this belt bends, you will see it take the shape shown in figure 2—a shape that precisely fits the sheave groove.

Two savings result. First, no outbulge of the sides means uniform sidewall wear—longer life for the belt. Second, the full side of the belt uniformly gripping the sheave wall will carry heavier loads without belt slippage—a saving in belt wear and also in power!

The Gates Vulco Rope is the only V-belt built with the patented concave side.

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

CHICAGO, ILL. 1524 South Western Ave.
HOBOKEN, N. J. Terminal Building
BIRMINGHAM, ALA. 1631 1st Ave., South
LOS ANGELES, CAL. 2240 E. Washington Blvd.
DENVER, COLO. 999 South Broadway
DALLAS, TEX. 2213 Griffin Street
PORTLAND, ORE. 333 N. W. 5th Avenue
SAN FRANCISCO, CAL. 2700 16th Street

GARGOYLE VACTRA OIL'S

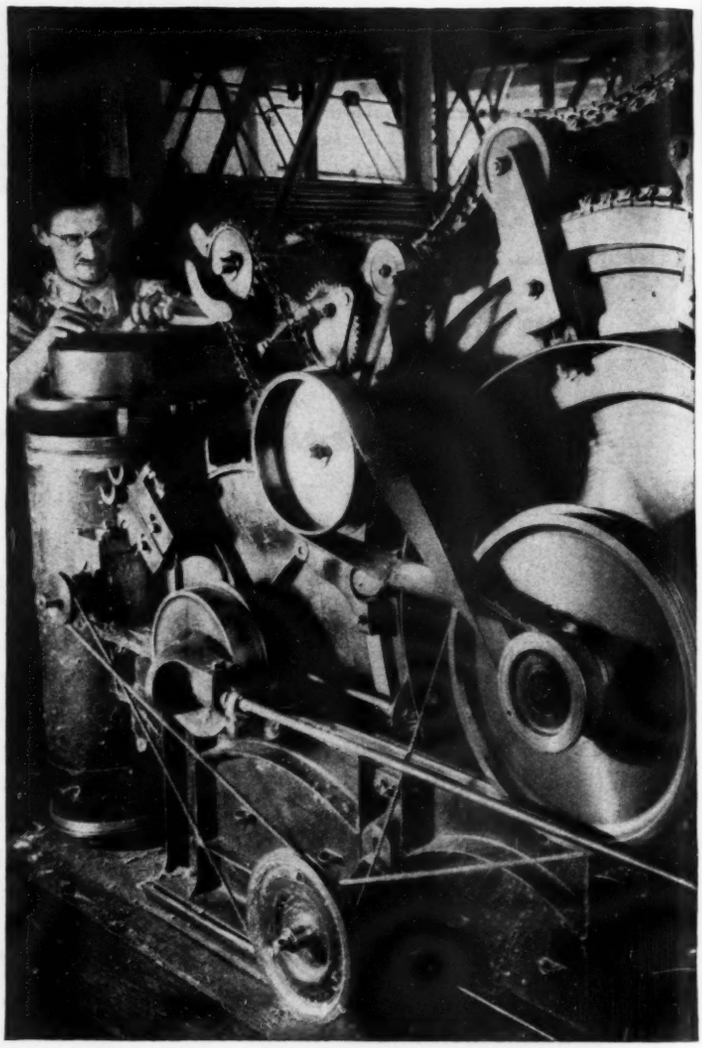
Pays Off

YOU GET A DOUBLE DIVIDEND when you lubricate hand-oiled bearings with Gargoyle Vactra Oil. This oil's high *persistence-of-film* nets you these two benefits:

❶ It assures maximum protection against wear.

❷ It minimizes spoilage of yarn caused by *oil-throw*.

This oil helps looms, cards—all textile machinery—maintain maximum efficiency. It helps you reduce power and maintenance losses. And at the same time, it minimizes rejects by helping you decrease "spotting."



CALL IN Socony-Vacuum for

YOU'LL BENEFIT FROM: 75 YEARS' LUBRICATION EXPERIENCE • PRODUCTS APPROVED BY ENGINE BUILDERS •

"PERSISTENCE-OF-FILM"

Two Ways

GARGOYLE

Lubricants

The Emblem of 75 YEARS' PIONEERING in "Correct Lubrication" 1866-1941

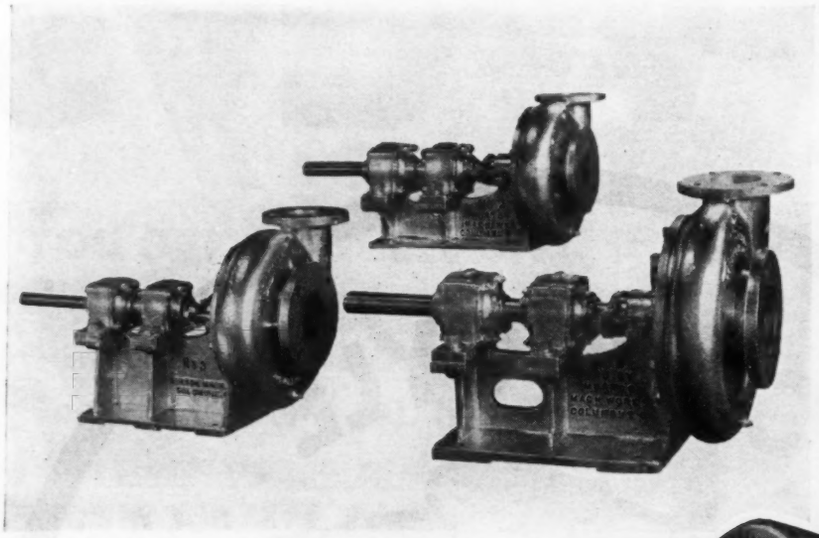
"Correct Lubrication"

THE RIGHT OIL FOR EACH JOB • NEW LUBRICANTS AHEAD OF NEW NEEDS •

SOCONY-VACUUM OIL COMPANY, INC. • Standard Oil of New York Div. White Star Div. • Lubrite Div. • Chicago Div. • White Eagle Div. • Wadhams Div. • Magnolia Petroleum Co. • General Petroleum Corp. of Calif.

Morton's Big Three

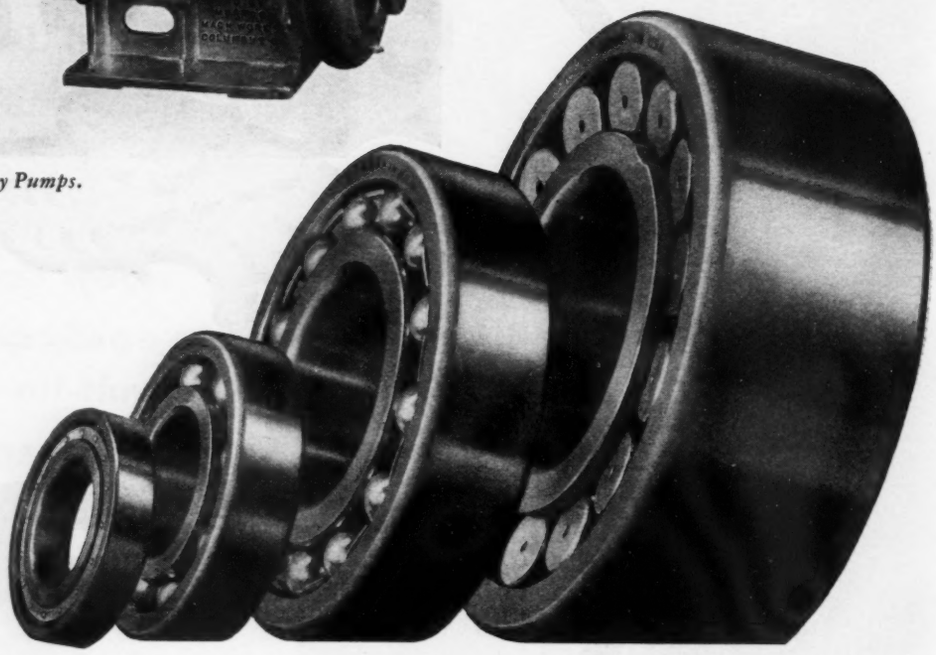
HEAVY DUTY PUMPS DEPEND ON SKF



2", 3" and 4" Stainless Steel Heavy Duty Pumps.

WE USE SKF BEARINGS

Morton Machine Works



Here are three outstanding advantages of Morton's big three Heavy Duty Pumps: (1) Each is equipped with non-clogging impellers. (2) Each is designed to give the highest efficiency in operation on dyeing machines or as water pumps with the least horsepower. (3) Each depends on SKF Bearings for smooth, steady running at low maintenance costs . . . on SKF Pillow Blocks for bearing protection. Put them all together, and you get sturdy, long-lived pumps that are immune to bearing trouble.

SKF INDUSTRIES, INC., PHILA.

4786

SKF *Ball and Roller* **BEARINGS**

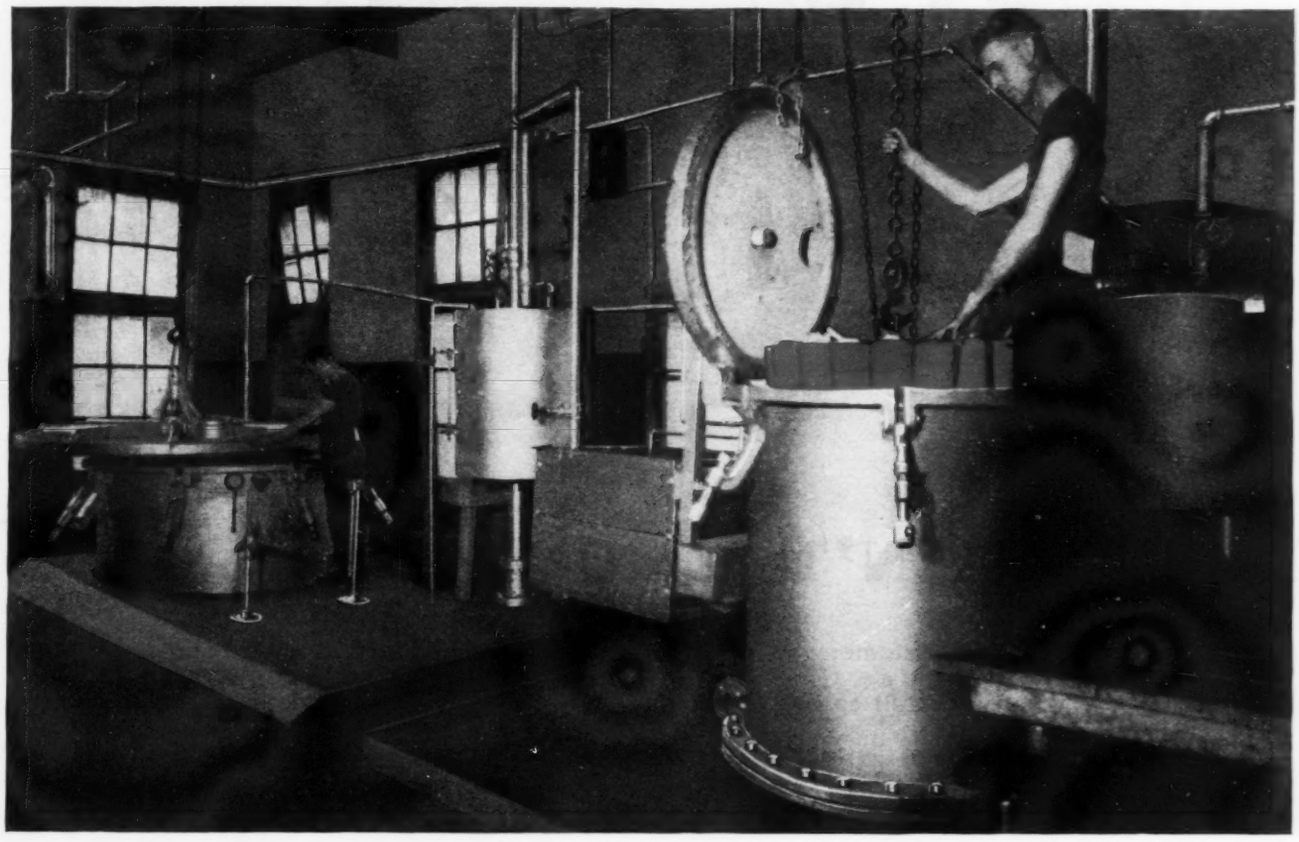
THE MORTON SYSTEM

STAINLESS STEEL PACKAGE AND BEAM DYEING MACHINES

To dye or bleach, Packages, Beams, Roving, spring and tube packages

MACHINES BUILT FROM STAINLESS STEEL OR NICKEL IRON

Equipped with either automatic or manual flow reversal



The above machines, 1—500 lb. Roving Dyeing Machine, or 1000 lb. Package Dyeing Machine, and 1—210 lb. Package Dyeing Machine, operating in the Richmond Hosiery Mills, Rossville, Ga.

Our machines are backed by 40- years experience in building dyeing machinery.

Ask about our Rinser system, giving twice the production at slight additional cost of one dyeing machine.

MANUFACTURED BY

MORTON MACHINE WORKS

COLUMBUS, GA.

— — Manufacturers of — —

Morton Improved Beam and Package Dyeing Machines to Dye from 1 to 2000 lbs.

Morton Improved Raw Stock Dyeing Machines to Dye from 1 to 1500 lbs.

Morton Heavy Duty Pumps of Stainless Steel and Nickel Iron Alloy.

Morton Automatic Ball Bearing Calender Racks

Morton Stainless Steel Quick Opening Gate Valves

NOSES CAN'T KNOW —

It's a rare customer who trusts the senses when the label is lacking. Today, with organized consumer demand and some legal requirements for informative textile labeling, women insist on the facts. It's a wise manufacturer whose merchandise bears them. Kaumagraph* Dry Transfers, Prestomarks, Embossed Seals, Lithographed Labels, Box-wraps, Package Inserts designed and executed to meet the peculiar requirements of your own merchandising problems, provide anything and everything for Unmistakable Identification—attractive, economical. Why not call for a Kaumagraph Identification man?

Identification Headquarters

*Trade Mark Reg. U. S. Pat. Off. "Kaumagraphs" are made only by Kaumagraph Company.

KAUMAGRAPH
16-22 E. 34th St., New York

Dry Transfers
Prestomarks
Embossed Seals
Lithographed packaging

General Offices and Plant, Wilmington, Delaware · · Representatives in Principal Textile Centers of the World

M.H.S. *Overhead Conveyors* give you these advantages

● Conceived, and designed entirely by MHS engineers, these conveyors carry full bobbins to the looms, and return empty bobbins to the strippers and empty boxes to the spinning room. Using a different "car" they carry picker laps to the cards, sliver to the drawing frames and return empty sliver cans to the cards, and picker lap pins and card waste to the picker room.

Both types have already proved their efficiency and economy in large nationally known mills. Wouldn't you like to know what MHS engineers with their extensive conveyor experience and wide familiarity with cotton mill problems can do to help cut your costs? Suggestions and estimates furnished promptly — without obligation. Write, telephone or telegraph to

MECHANICAL HANDLING SYSTEMS, INC.
Manufacturing Engineers
4612 NANCY AVE. • DETROIT, MICH.

1. They carry picker laps, sliver, roving, bobbins, finished goods and empty lap pins, sliver cans, bobbin boxes, etc., economically and safely.
2. to any room or rooms in the entire mill.
3. keeping the aisles and alleys free—avoiding confusion.
4. eliminating repeated manual handling, and pushing, lifting, storing, waiting.

It will pay you to investigate this thoroughly mill proved method of producing a better product—quicker—at lower cost.

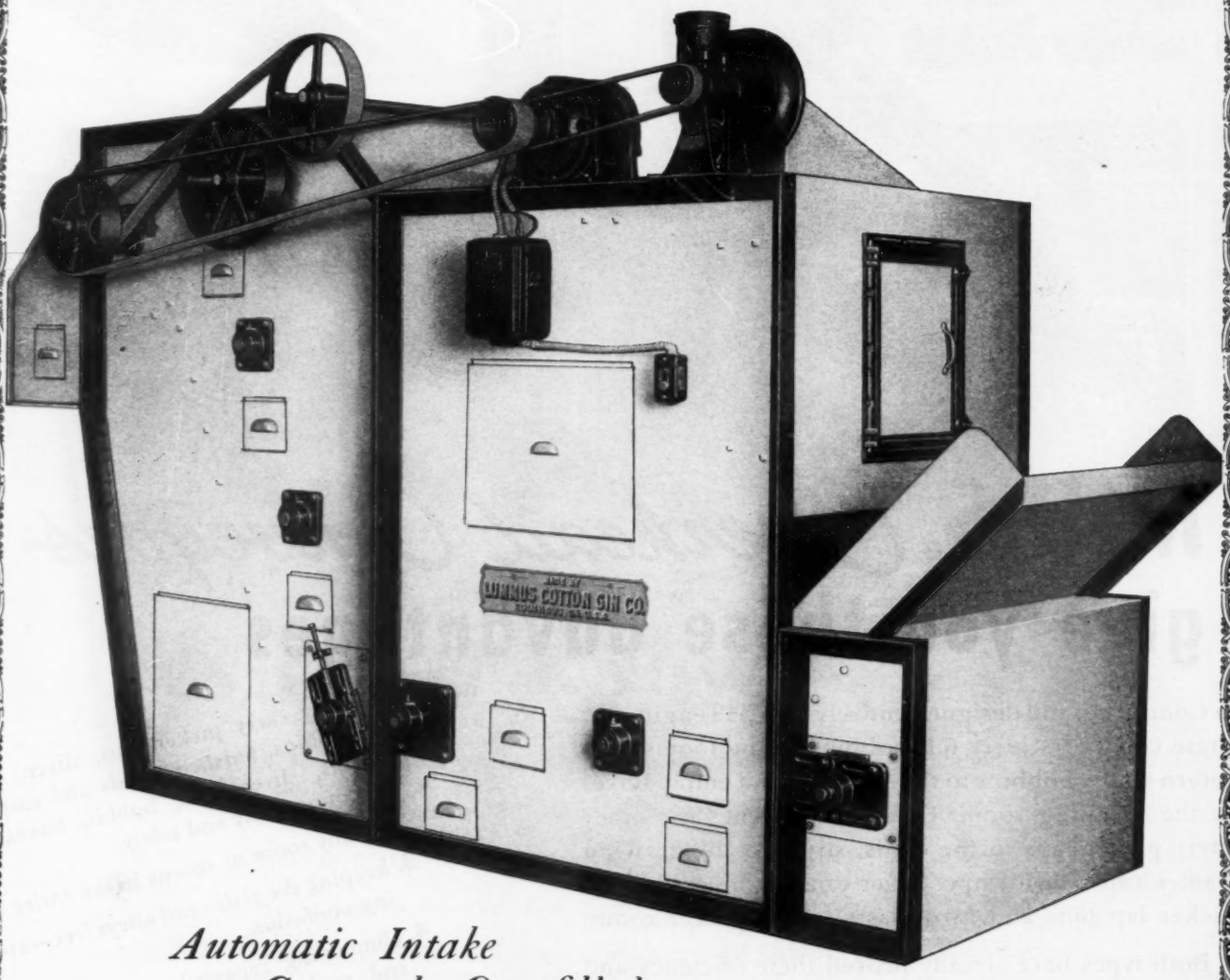
SEND FOR MORE DETAILS TODAY

MECHANICAL HANDLING SYSTEMS, Inc.

Designers and Builders of Material and Product Handling Equipment

Nearly a quarter of a century's experience in applying the principles and economies of continuous production to a wide variety of different industrial applications

THE LUMMUS BLENDING FEEDER

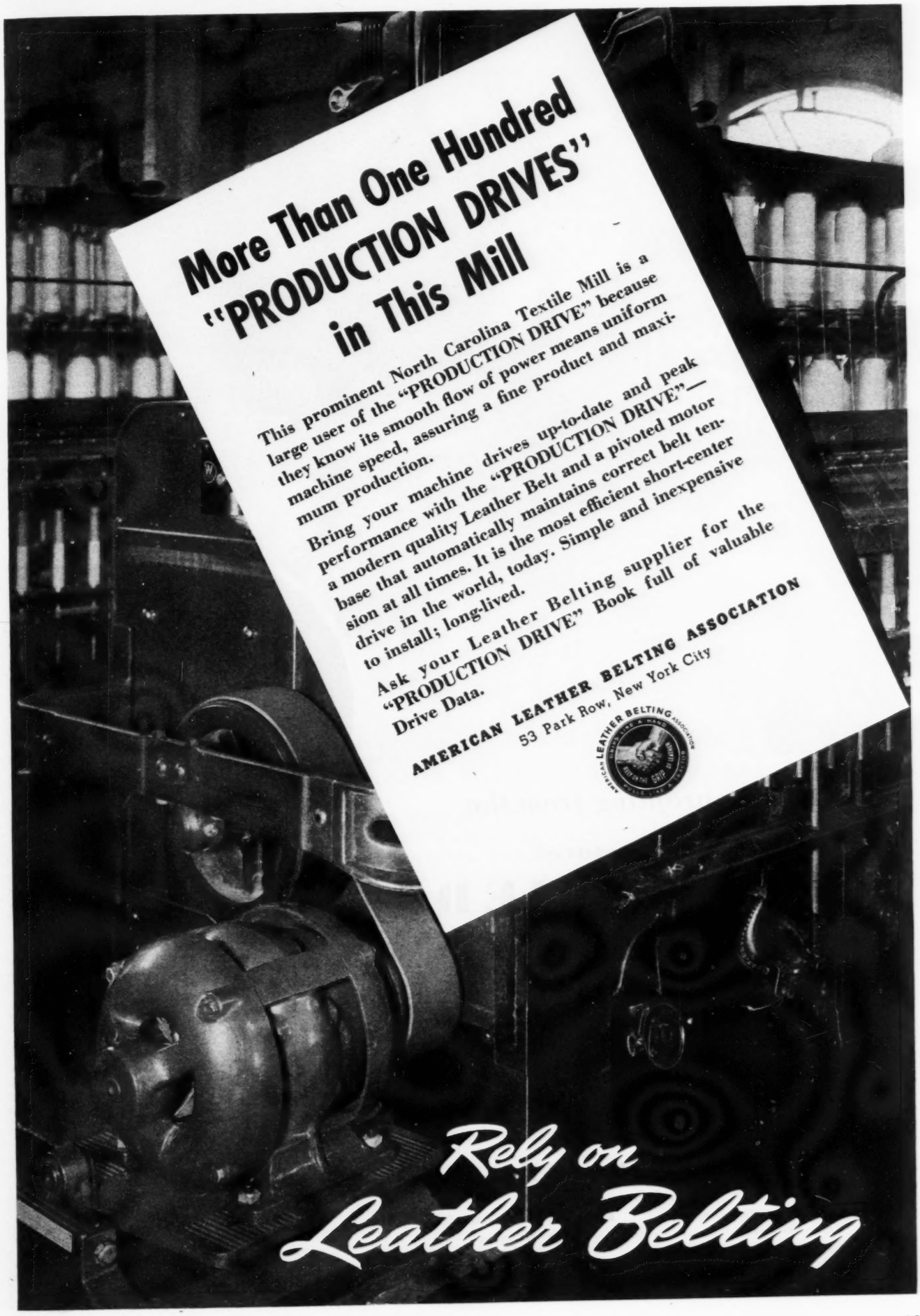


Automatic Intake
Cannot be Overfilled
Improved Cleaning Grids
Individual Motor and Dust Fan
All Ball Bearing Throughout

Sold by

AldricH MachinE WorkS

Greenwood, South Carolina


More Than One Hundred "PRODUCTION DRIVES" in This Mill
This prominent North Carolina Textile Mill is a large user of the "PRODUCTION DRIVE" because they know its smooth flow of power means uniform machine speed, assuring a fine product and maximum production.
Bring your machine drives up-to-date and peak performance with the "PRODUCTION DRIVE"—a modern quality Leather Belt and a pivoted motor base that automatically maintains correct belt tension at all times. It is the most efficient short-center drive in the world, today. Simple and inexpensive to install; long-lived.
Ask your Leather Belting supplier for the "PRODUCTION DRIVE" Book full of valuable Drive Data.
AMERICAN LEATHER BELTING ASSOCIATION
53 Park Row, New York City
Rely on Leather Belting

Are you profiting from the

"Double Feature"

TUFFERIZED

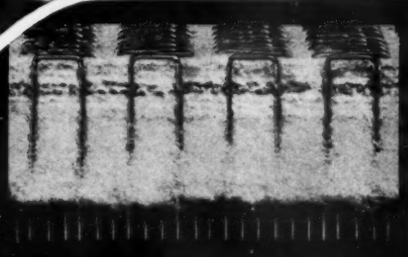
U. S. PAT. NO. 2,174,179

CARD CLOTHING

Sets Closer and more Accurately!
Hugs the Cylinder!
Strips Easier!
Saves Grinding Costs!

Study the Patented Tuffer Features, see why we say—you get *more* and *better* carding for your money by using TUFFER.

Inspect your card clothing now! Is it worn? Need replacement? Call in your Howard Bros. representative. He will appreciate your business and show it by quick, careful service.



"TUFFERIZING" PROCESS

An exclusive Howard Bros. patented-precision-process, makes every wire staple seat squarely, flat, and firmly into the famous, TUFFER foundation. All wires are even in length, spaced uniformly and perfectly parallel at all times. Each staple cut clean, sharp, smooth and free from wire burrs. Uniformity impossible to get any other way.

TUFFER (PATENTED) FOUNDATION

is made of carefully selected and specially constructed cloths for our own particular use. Tested to be several times necessary strength, TUFFER foundation is "cushioned" just right to make the wire shock-proof to the constant hammering of the various stocks carded.

HOWARD BROS. MFG. CO.

WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas

Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

1866 OUR 75th YEAR 1941

PRODUCTS: *Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants • Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted-Eye and Regular Wire Heddles.*

SLASH

DAYS OFF YOUR REPAINTING SCHEDULE!

Keep production speeding, save time with* DULUX *High-Hiding Mill White

. . . DOES MOST JOBS WITH ONLY ONE COAT!

WITH production at top speed filling rush orders, your workers need maximum light. Yet you can't afford to take time out for a two- or three-coat paint job. *Time* is vital. You need a mill white that goes on FAST!

You need DULUX High-Hiding Mill White. It goes on *fast* . . . and it often does the job with ONLY ONE COAT.

With DULUX the paint crew goes down the line *once*—and production returns to normal much faster than if several coats were needed. You buy fewer gallons and save plenty on labor costs.

DULUX starts brilliantly white . . . stays white, too. It dries conveniently fast, yet it's fast and easy to apply.

With DULUX you give workers brilliant light reflection. You reduce seconds. Your production costs drop. Repaintings are fewer and farther between with DULUX because of its lasting whiteness retention. This durability greatly cuts your paint overhead. Find out more about DULUX High-Hiding Mill White *today!* Send in the coupon.

DU PONT
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DULUX

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HIGH-HIDING MILL WHITE

E. I. du Pont de Nemours & Co. (Inc.)
Finishes Div., Dept. C-41, Wilmington, Del.

Please see that I get complete information about DULUX High-Hiding Mill White.

Name .....

Address .....

City ..... State .....

Meeting the Requirements
OF THE
SOUTHERN TEXTILE ASSOCIATION

At a recent meeting of the Eastern Carolina Div. of the Southern Textile Association the following factors were suggested as ideal for material handling.

1. *Stock must be moved with the least amount of effort.*

★

2. *It must be handled in a manner safest to operative moving it.*

★

3. *The stock must arrive at its destination in the best possible condition and with the least damage.*

★

4. *Least mixing of stocks.*
5. *Must be economical.*
6. *The path of shortest haul.*
7. *The fewest possible operations.*
8. *Minimum empty backhauls.*

9. *No damage to floors, buildings, other equipment.*

★

This is how the C-D complete line of DIAMOND Vulcanized FIBRE Hollow Ware *adequately meets these requirements.*

1... The moving of DIAMOND FIBRE Hollow Ware requires a minimum of human exertion—

. . . DIAMOND Vulcanized FIBRE . . . a pure cotton fibre product . . . tough as horn . . . strong as iron . . . ***is less than half as heavy as aluminum.***

. . . containers made from DIAMOND Vulcanized FIBRE are designed to eliminate all needless dead weight and are correctly balanced.

2... DIAMOND FIBRE Hollow Ware **provides the safest possible means for moving things from "here to there"** . . . no exposed rivet ends to scratch hands or tear clothes . . . does not splinter or shatter . . . no dead weight to needlessly tax man power.

3... C-D designed solid metal or fibre top rims . . . free from exposed rivets . . . make for **smooth loading and unloading of materials and parts.** Further insurance against damage is the fact that DIAMOND FIBRE is inherently smooth, hard, rust proof, splinter proof, mildew proof. All metal parts are rust resistant plated.

4.. 5.. 6.. 7.. 8..

C-D does more than just sell material handling containers . . . in its many years of contact with the Textile Industry **C-D has accumulated a wealth of material handling "know how"**—which it is ready to apply to your particular handling problem.

9. C-D's **combination of light weight and extreme durability is your guarantee of minimum damage** to "floors, walls and other equipment". Casters can be of any type suited to your floors. Bumpers are available for all types of containers.

Write now for DIAMOND FIBRE Hollow Ware Catalog HW-9 . . . **put your material handling problems up to C-D . . . get the best practical containers . . . profit by C-D's 41 years of Textile Field experience.**

DIAMOND Vulcanized FIBRE Hollow Ware
Boxes • Barrels • Trucks • Cans • Baskets • Trays

CORRECTLY DESIGNED
ACCURATELY BUILT

CONTINENTAL-DIAMOND FIBRE COMPANY

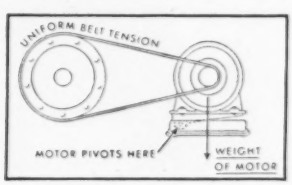
Southern Warehouse & Sales Office: Spartanburg, S. C. C. L. Simmons, Mgr.

NEWARK, DELAWARE BRIDGEPORT, PA. VALPARAISO, IND. TORONTO, CAN.

A treaded surface grips better, slips less!

Buy VIM TRED Leather Belt for greater production!

You wouldn't buy a new smooth tire for your car. Why purchase a smooth belt, when you can get a treaded belt, certified to cost less per unit produced?



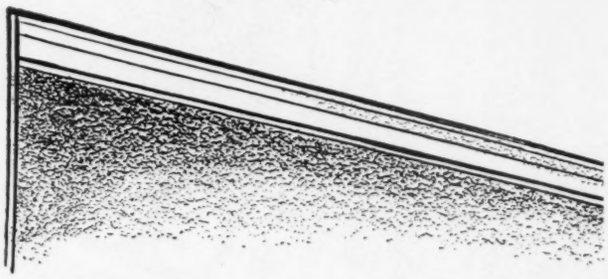
Combine this better belt with a pivoted motor base, and you have the most efficient, space-saving, short-center drive. When expanding or revamping your production facilities, be modern, be thrifty, be wise. Get VIM TRED Leather Belt, controlled by Houghton from hide to pulley. Write for sample.

E. F. HOUGHTON & CO.

Charlotte - PHILADELPHIA - Chicago

MADE IN U.S.A.

RUN THIS WAY



"*Mr. Blank* FROM DU PONT TO SEE YOU"

WHEN you greet the Du Pont representative, no matter what his name, here's an important fact to remember: This man by training and experience has a broad knowledge of textile chemicals and their use in processing fibers and fabrics. His job is to serve you, to help you find solutions to your bleaching problems and to translate your new ideas into profitable practice.

He is familiar with bleaching problems, knows the importance of holding down production costs. He offers you the benefits of his own personal experience backed by the knowledge of a group of trained specialists—research men and engineers—who have been working with peroxides and peroxide bleaching problems for years.

He brings into your plant up-to-the-minute facts from modern laboratory research plus the useful experience which du Pont has acquired in almost 50 years of service to the textile processing industry.

Next time the Du Pont man comes in, discuss your present plans and problems with him. He is worthy of your confidence, and you can depend on him to uphold the Du Pont standard for technical competence.

Listen to "Calvacade of America every Monday Evening 7:30 to 8 p. m. E. S. T. N. B. C. Network

DU PONT

E. I. DU PONT DE NEMOURS & COMPANY
Incorporated
The R. & H. Chemicals Dept.
Wilmington, Delaware
DISTRICT SALES OFFICES:
Baltimore, Boston, Charlotte, Chicago, Cleveland, Detroit, Kansas City, Newark, New York, Niagara Falls, Philadelphia, Pittsburgh, San Francisco & El Monte, Cal.

R & H PEROXIDES *for Textile Processing*

ALBONE* — 100 VOLUME ELECTROLYTIC HYDROGEN PEROXIDE

SOLOZONE* D F F† — DUSTLESS, FREE FLOWING SODIUM PEROXIDE

SODIUM PERBORATE

*Reg. U. S. Pat. Off. †Trade Mark

The STRONGEST LINK . . .

for Welded Piping Systems

JOINTS are never the "weak links" in welded piping systems when your pipe or tubing is correctly installed with Grinnell Welding Fittings. For, these special-quality stock fittings are identical with the pipe itself . . . *metal-matched* to correspond in strength and chemical and thermal characteristics with any pipe or tubing you select.

Because they are precision-engineered in all mechanical characteristics, too, Grinnell Welding Fittings speed-up and improve welding. Accurately beveled faces . . . full-strength outlets extruded by exclusive Grinnell process save laborious saddle-welding . . . only simple butt welds are required to produce joints of maximum strength.

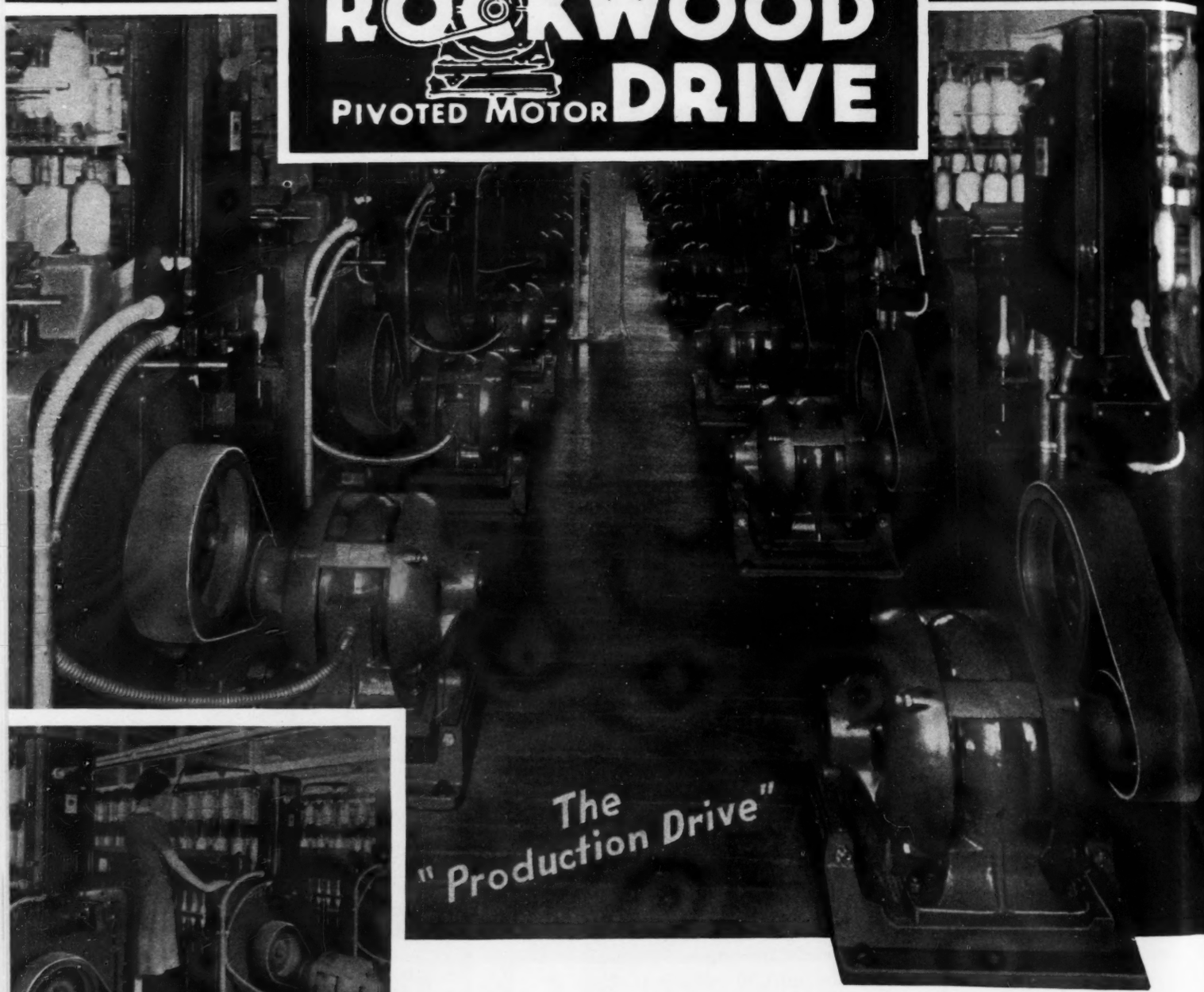
Write for full details in data booklet "Grinnell Welding Fittings". Grinnell Company, Inc., Executive Offices, Providence, Rhode Island. Branches in principal cities.

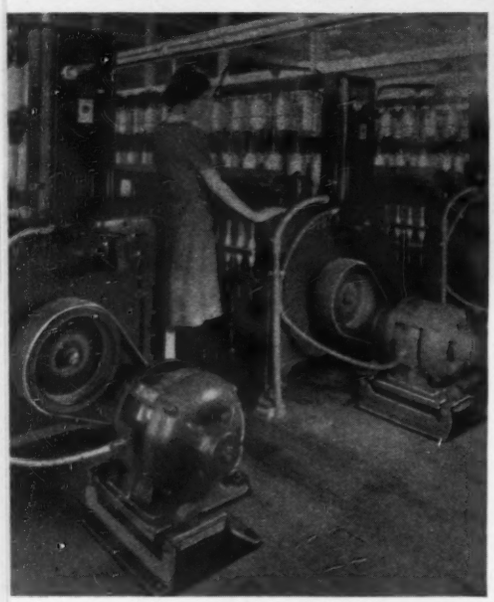
WELDING FITTINGS BY GRINNELL

WHENEVER PIPING IS INVOLVED

HENDERSON COTTON MILLS

ROCKWOOD PIVOTED MOTOR DRIVE





THE PARADE TO ROCKWOODS.

Above pictures show Rockwood Drives at Henderson Cotton Mills, Henderson, N. C. Another large and important mill that has included Rockwood Drives in its modernization program. Mill after mill is turning to Rockwood Drives for increased production, better quality and lower costs to run. Join the Parade. You, too, can secure the same improvement for your machines.

PRODUCTION FROM SPINNING AND TWISTER FRAMES.

Rockwood Drives for spinning and twister frames increase output of driven machines because they maintain more uniform and higher machine speeds. Automatically they keep the belt tight and so avoid practically all slip losses, regardless of changing loads or belt stretch.

If you will check the speeds of some of your machines before and after installing Rockwood Drives you will appreciate why any short center belt drive *must have* a Rockwood pivoted-motor base under the motor *if you want maximum machine output and dependable machine operation.* The Rockwood Drive brings to its users a new and accurate control of machine speeds that will surprise—often amaze—you.

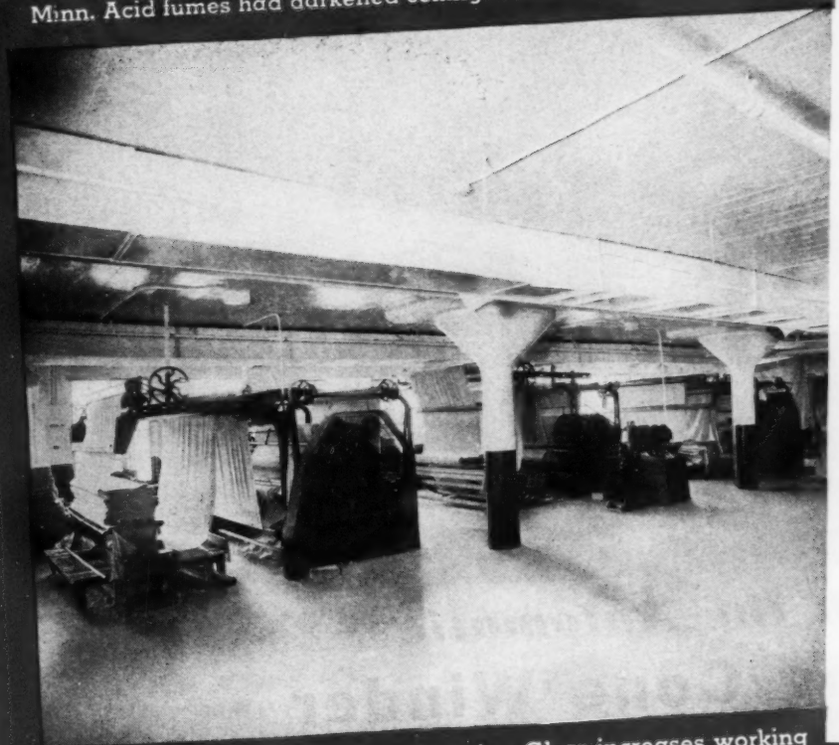
CHECK THE SPEEDS OF YOUR SPINNING AND TWISTING FRAMES AND LOOMS. Note the frequent differences between calculated and actual speeds and *the absence of uniformity in speeds as they operate*—when they do not have Rockwood pivoted motor bases under the motors. THEN CALL IN YOUR NEAREST ROCKWOOD DRIVE DEALER or write for a Rockwood engineer to show you how you can increase production and improve quality with Rockwood Drives.

Largest manufacturer of flat belt pulleys in the world—Manufacturer of Rockwood V-belt Drives

ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, IND.

TO LIGHT UP – PAINT UP!

BEFORE: Napper room of North Star Woolen Mills, Minneapolis, Minn. Acid fumes had darkened ceiling, reducing light reflection.



AFTER: S-W Save-Lite Fume-Resisting Gloss increases working light in napper room, banishes gloom. No change in light sources.

BRIGHT, well-lighted plants mean more production, fewer errors, happier workers. Hundreds of tests prove this. And hundreds of tests prove that Save-Lite painted walls and ceilings increase working light remarkably . . . banish gloom . . . make plants brighter, cheerier.

What are Save-Lite Paints? They are intensely white finishes specially formulated by Sherwin-Williams to give maximum light reflection—in some cases as high as 89%. They cover dark walls and ceilings amazingly. They are durable, washable, are not damaged by moisture condensation. (A special type resists chemical fumes). They brush beautifully. For wood, plaster, brick or concrete. Made in Flat, Eg-Shel, Gloss.

Make your plant a better workshop with a coat of Save-Lite! Its covering power makes it highly economical. Get the facts, mail coupon today to Sherwin-Williams Company, Cleveland, Ohio.

SAVE-LITE SERVICE

Save-Lite purchase includes service by representatives with years of experience in the painting needs of plants, textile mills, shops. Free Save-Lite service includes special tests and surveys of plant and mill village requirements.

SHERWIN-WILLIAMS

SAVE-LITE WHITE

THE LIGHT CONDITIONING PAINT

COVER THE EARTH

THE SHERWIN-WILLIAMS COMPANY
104 C. Prospect Avenue, N. W., Cleveland, Ohio

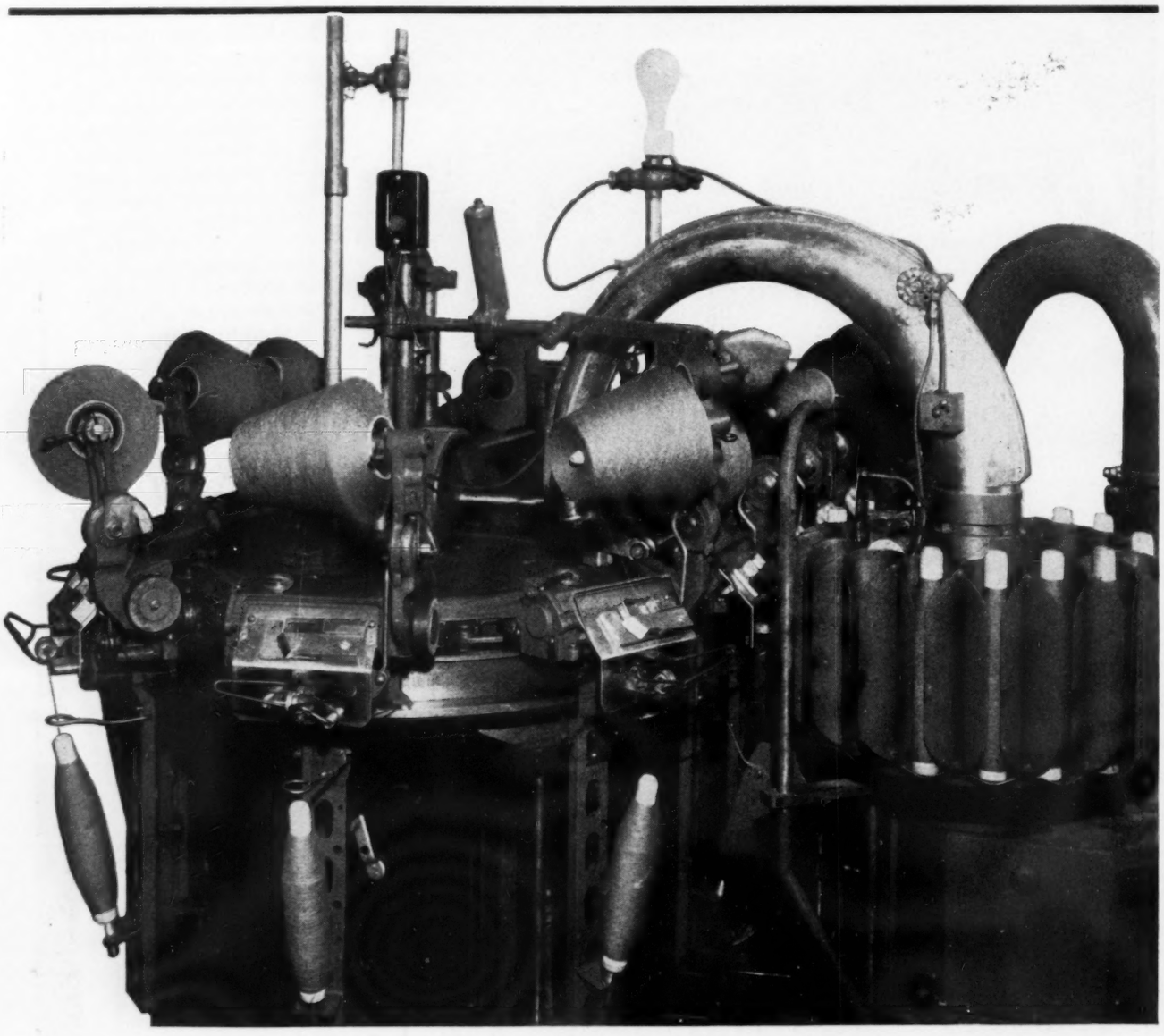
Gentlemen:
Please send information on better illumination with white paint and the facts on Save-Lite White.

Name_____

Company_____

Address_____

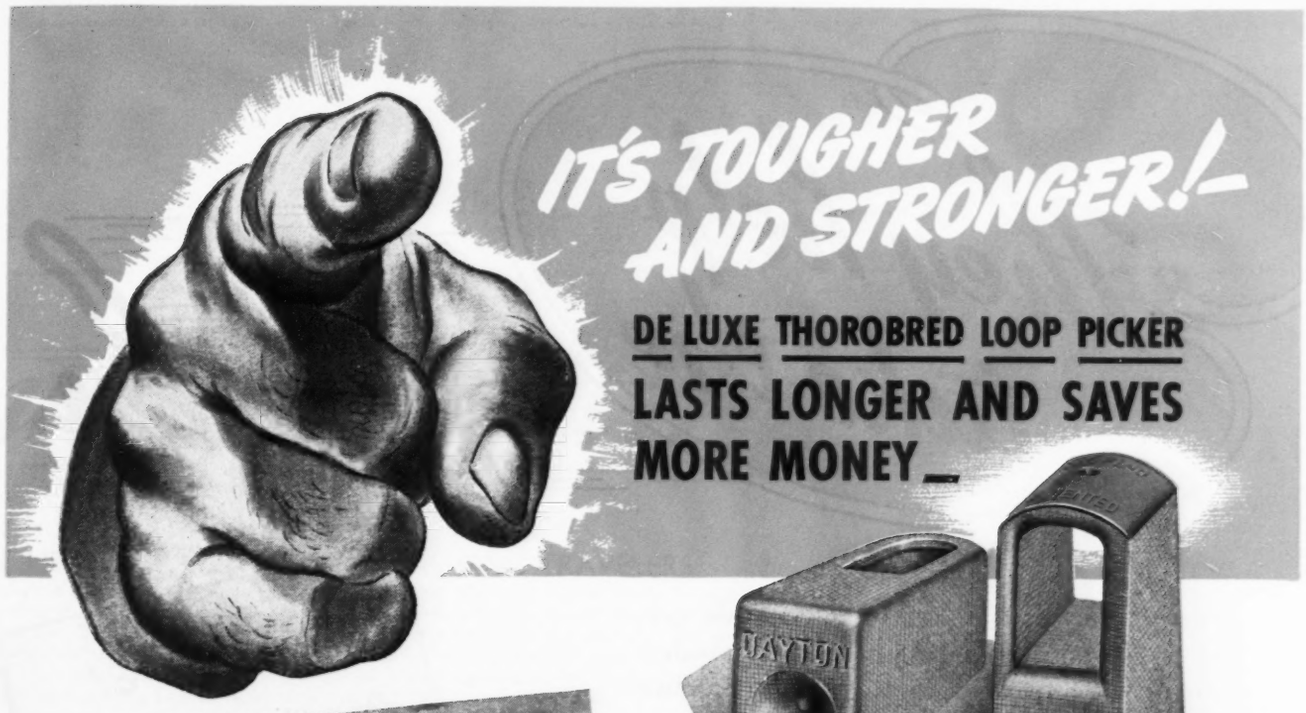
Wind Knitting Cones at
1/3 YOUR PRESENT COST



With the Automatic
Knitting Cone Winder

ABBOTT MACHINE COMPANY
Wilton, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.



THE THOROBRED LOOP PICKER

New flared bottom... rounded corners on front of picker... molded by new method to eliminate roughness. Keeps its shape and "stays put" on the stick. Has proper cushion. Easy to install. Proved long life and greater economy.

THE THOROBRED LUG STRAPS

Freedom from adjustment and constant power maintenance assures increased production at lower costs. Thorobred Lug Straps have extra strength ... proper cushion ... desired resilience ... and the ability to absorb shock. Never require adjustment and have long, trouble-free life.

Here's cash-in-your-pocket news from Dayton about the new De Luxe Thorobred Loop Picker. One glance at its lighter color shows you that it's different. But one glance can't tell you how it lasts longer and gives you increased production. The special fabrics in the new De Luxe Thorobred picker are two times stronger... the resilient rubber that bonds the fabrics together is much tougher and stronger... the fabric is finer woven to give maximum smoothness.

But that's not all of the new De Luxe Thorobred's features! Look at its flared bottom which eliminates injury to the picker when applied. See the rounded corners on the front of the picker that reduce roughness to an absolute minimum. Yes, and the front of the new De Luxe Thorobred Loop Picker is smoother. too... the result of a new method of molding.

We can't give you all the facts in a few words about this new development of Dayton's pioneering research. So write today—or get full details from your nearest distributor about the De Luxe Thorobred Loop Picker.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio and Waynesville, N. C.
Dayton Loom Supplies are protected by U. S. Patents issued or pending.

DISTRIBUTED BY

GREENVILLE BELTING CO.	Greenville, S. C.
GREENVILLE TEXTILE SUPPLY CO.	Greenville, S. C.
ODELL MILL SUPPLY CO.	Greensboro, N. C.
THE TEXTILE MILL SUPPLY CO.	Charlotte, N. C.
INDUSTRIAL SUPPLIES, Inc.	LaGrange, Ga.
YOUNG & VANN	Birmingham, Ala.
TEXTILE SUPPLY CO.	Dallas, Texas
AMERICAN SUPPLY CO.	Providence, R. I.
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CANADIAN REPRESENTATIVES

ROSS WHITEHEAD & CO., Ltd. ..... Montreal, Quebec

Dayton
Thorobred TEXTILE PRODUCTS
LOOM SUPPLIES—Dayco TEMPERED ROLL COVERINGS
Made by the World's Largest Manufacturer of V-Belts
COPYRIGHT 1941, THE DAYTON RUBBER MFG. CO.

They help take the Kinks

Precision made of the finest alloy steels, uniform in weight and shape, U. S. Ring Travelers guarantee the qualities which help to produce smoother yarn and faster spinning room operation.

Leading mill men have found that U. S. Travelers are heat resistant because of their patented "speed-cooling", that they stay on the frame, even at high speeds, and maintain a consistently even, correct tension required for good yarn.

May we remind men of the knitting trade who are interested in securing trouble-free ring traveler efficiency that there's "A U. S. Traveler for Every Fibre."

Write for details and samples, or contact your nearest representative.

Visit Us at Booth 242-243 Knitting Arts Exhibition Philadelphia April 21-26

U. S. RING TRAVELER CO.

PROVIDENCE, R. I. GREENVILLE, S. C.

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U.S. RING TRAVELER CO.

UNIVERSAL RING

BOWEN ROUND POINT TRAVELERS
BOWEN SQUARE POINT TRAVELERS
BOWEN IMPROVED VERTICAL BRONZE
BOWEN PATENTED BEVEL EDGE
BOWEN PATENTED NE-BOW VERTICAL
BOWEN PATENTED VERTICAL OFFSET
BOWEN FLAT OVAL AND ROUND WIRE TRAVELERS

out of Knitting

THE NE-BOW PATENTED VERTICAL RING TRAVELERS

Developed to meet the particular needs of the silk and rayon trade in the process of throwing due to the recent adoption of the vertical ring, particularly of the lubricating type. By eliminating the pivoting action of the traveler, the traveler is constantly kept in close contact with the groove or device for lubricating the ring and assists in distributing the lubricant evenly over the entire inner surface of the ring, promoting a longer life to the traveler and a more even twist.

THE BOWEN PATENTED BEVEL EDGE TRAVELER

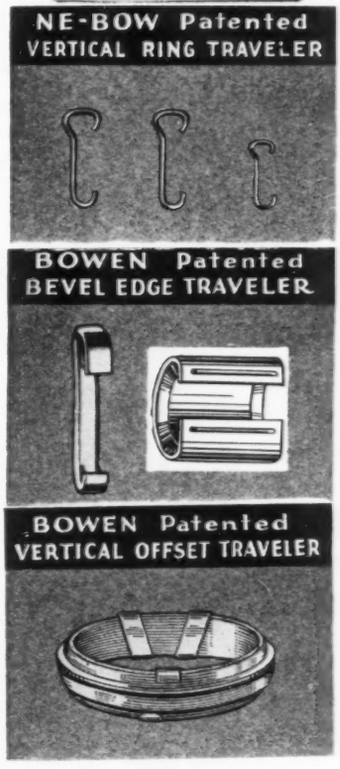
The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth, even yarn. There are no angular edges to flatten the end. There are no split ends in throwing rayon and silks . . . no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos, kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.

THE BOWEN PATENTED VERTICAL OFFSET TRAVELER

After exhaustive tests under actual running conditions, the Bowen Patented Vertical Offset Traveler has proved its worth in the twisting of cords and plys. Based on the true mechanical principle of taking a diagonal position with relation to the ring, presenting a bearing surface over the full width of the Traveler. This design prevents gripping or binding . . . gives an even tension . . . an evener rounded product . . . longer life to the traveler.

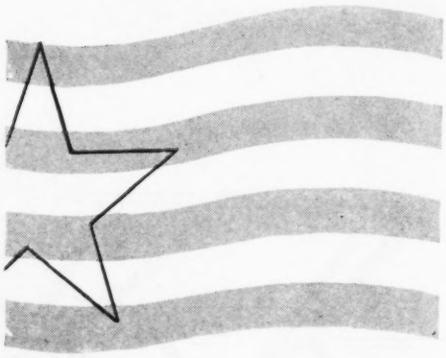
Sealed metal containers guarantee that your U. S. Travelers will reach you in perfect condition, with no tampering or loss in count.

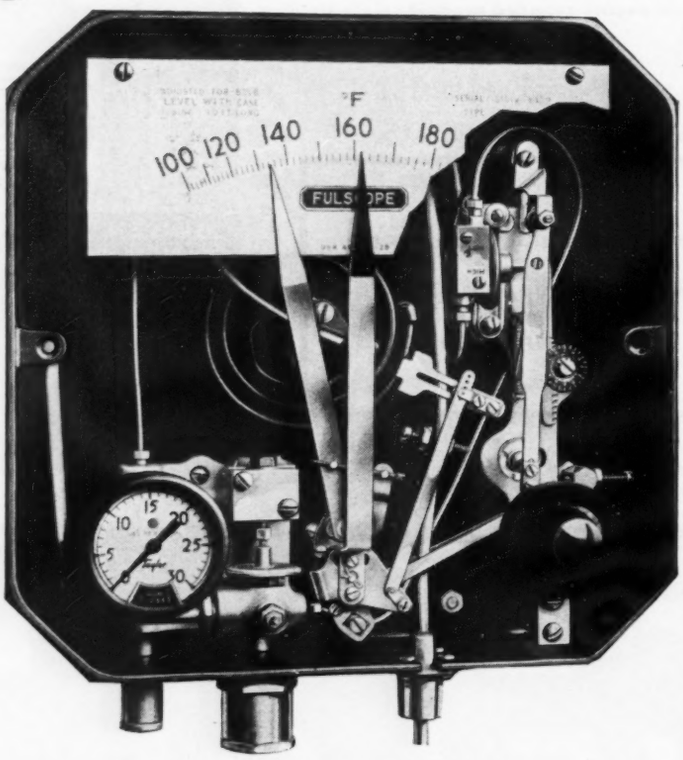
U. S. PRECISION-MADE RING TRAVELERS



STANDARD TRAVELERS

HOW TO KEEP ON DYEING FOR UNCLE SAM





TAYLOR FULSCOPE CONTROLLER

(Interior, Indicating Type)

Keeps dye temperatures constantly right

Dye right the first time . . . dye uniformly every time . . . meet the rigid U. S. specifications on vat-dyed khaki—use Taylor Fulscope Controllers on your dye machines

YOU'LL keep on getting Government work if you do an A-1, perfect job. *If* the vat-dyed khaki you produce is always absolutely uniform in color and color-fastness. *If* jig vat temperatures don't vary even the slightest during the operation.

Now's no time for guesswork. Now's no time for being *almost* exact. U. S. standards admit no excuses. You'll lose out if you don't watch out.

Taylor Fulscope Controllers guarantee you'll please Uncle Sam. They will guard and govern temperature in raw stock dyeing, continuous dye machines, piece dyeing in woolen and worsted, and package dye machines. They will prevent *any* variation. Taylor Fulscopes will make certain that Uncle Sam likes the way you dye.

Fit your dye machines with Taylor Fulscope Controllers. Find out how Taylor Fulscopes can make you sure, not sorry. Find out *free*—today—by writing Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Taylor

Indicating • Recording • Controlling

TEMPERATURE, PRESSURE, FLOW *and* LEVEL INSTRUMENTS

New Kind of Light

for speeding production in textile mills in 1941

Knitting Dept. of Wiscassett Mills in Albemarle, N. C. installs G-E MAZDA F lamps

1 OLD LIGHTING in the topping and knitting department of the Albemarle, N. C. Wiscassett hosiery mills of the Cannon Mills consisted of 12 drop cord lamps per aisle, each equipped with a 40-watt G-E MAZDA inside frosted lamp. This installation provided approximately 25 footcandles at the needle bar of the knitting machines and was spotty and glaring.

2 NEW LIGHTING recently installed with 3500° white G-E MAZDA F (fluorescent) lamps in modern two-lamp fixtures provides about 60 footcandles of well-diffused, shadow-free light, at the needle-bar. Each fixture contains two 40-watt G-E MAZDA F lamps. Because the operators can see faster with this new kind of lighting, they work more efficiently and tire less rapidly.

3 CLOSE-UP PHOTO of the topping machine operation shows fluorescent fixtures three feet above the needle-bar of each machine. About 90 footcandles of soft, cool light is produced. Although the new lighting in this mill produces approximately *twice* as much light as the old installation, it consumes only 120 watts more current per aisle!

Before you do anything about the lighting in your mills, find out the amazing possibilities that this new kind of lighting with G-E MAZDA F lamps offers you. Like other G-E MAZDA lamps, these lamps are made to give maximum light throughout life . . . *made to stay brighter longer.*

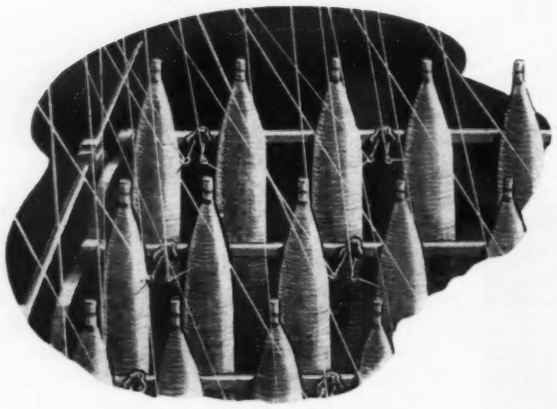
FLEUR-O-LIER
"SPECIFICATIONS FOR LUMINAIRES, FITTINGS AND AUXILIARIES FOR FLUORESCENT LAMPS"
ETL
A Copy of This Certificate Should Appear upon Each Unit or Package
THIS CERTIFICATION IS CONTINGENT UPON EMPLOYMENT OF CERTIFIED AUXILIARIES OF OVER 85% POWER FACTOR

4 SEE YOUR G-E MAZDA LAMP DISTRIBUTOR for a wide choice of certified fixtures, complete with G-E MAZDA F lamps, ready to hang up and turn on. General Electric does not make fixtures, but is glad to recommend certified fixtures bearing the Fleur-O-Lier or RLM tag. For full information, write General Electric Co., Dept. 166-C-D, Nela Park, Cleveland, Ohio.

G-E MAZDA LAMPS

GENERAL ELECTRIC

LOWER PRICES ON QUANTITY PURCHASES
of G-E MAZDA lamps—$5 worth for $4—$15 worth for $11.25! Also new larger discounts for contract purchasers! See your General Electric MAZDA lamp supplier today!



SPIN THEM FREER FOR

FASTER PRODUCTION

...with TYCOL SPINDLE OILS

Spindle lubrication is a decisive factor in spindle performance. To promote maximum spinning production through uniform friction-free operation, Tycol offers a six-fold answer in the form of 6 spindle oils scientifically engineered to each specific need. Tycol 318, for example, is a very highly refined, light colored, low viscosity spindle oil which is recommended for bath lubricated spindles operating at speeds in excess of 5,000 r.p.m. This oil is extremely stable and resistant to oxidation. The other oils are of the same high quality but engineered so as to provide the ideal lubricant for either ball, roller or plain bearing spindles.

If you are interested in reducing bolster losses, in eliminating spindle drag and thread breakage, learn about these oils from the new Tide Water Bulletin "Principles of Textile Mill Lubrication." It discusses the problems and recommends proved answers not only for spindles but for the many different machines throughout the mill. Write for a copy.

Regional Offices: Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

TIDE WATER ASSOCIATED OIL COMPANY

EASTERN DIVISION

17 Battery Place • New York, N. Y.

INDUSTRIAL TYCOL OILS-GREASES

STOP—
THE SABOTAGE OF DUST, SOOT, AND SMOKE IN *YOUR* PLANT!

ELECTRO-MATIC FILTERS KEEP DUST, SOOT, SMOKE OUTSIDE

It isn't possible to control the dust, soot and smoke *outside* your plant—but you can keep it from getting *inside* to spoil your dyeing, bleaching, finishing and drying operations!

Many textile mills are today finding that losses due to such spoilage can be stopped by the use of air filters specifically designed to collect the finest air-borne particles.

The Electro-Matic filter, which collects dust, soot and smoke electrically, has been tested and proved in many of the country's leading textile mills. Its self-cleaning feature, whereby all collected particles are washed from the filter curtain by continually passing it through an oil bath, makes interruptions and shut-downs for cleaning unnecessary.

Write for Bulletin No. 250 C which describes the operation of the Electro-Matic in detail.

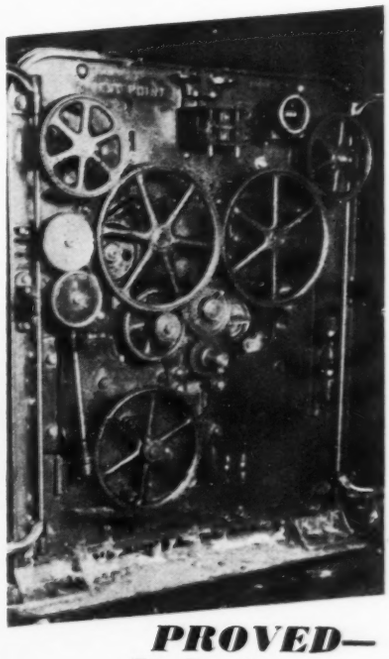
AMERICAN AIR FILTER CO. INC.
199 Central Avenue, Louisville, Ky.
In Canada, Darling Bros. Ltd. Montreal, P. Q.

THIS CAN'T HAPPEN WITH THE ELECTRO-MATIC ON THE JOB!

The attraction of dust, soot and smoke particles to yarns in the spinning operation, which results in soilage and loss, cannot be overcome except through eliminating the minute air-borne particles from the air before it is supplied to the spinning room. Streaking and discoloration have been completely overcome in plants where Electro-Matic filters have been installed. There is an American Air Filter Engineer near you who will be glad to call and discuss your dust problem first hand. Write us for his address.

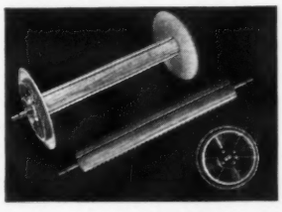
AAF ELECTRO-MATIC
Automatic Electrostatic Air Filter

GEARS
For Textile Machinery



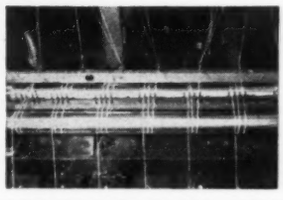
PROVED—
By Performance

Other QUALITY Products



LOOM BEAMS AND BEAM BARRELS . . . West Point loom beams and beam barrels are superior in their operation and economy.

THE BACHMAN GUIDE . . . eliminates heavy top rollers. "Blow Outs" reduced about 90%. Permits increase in twister speed.



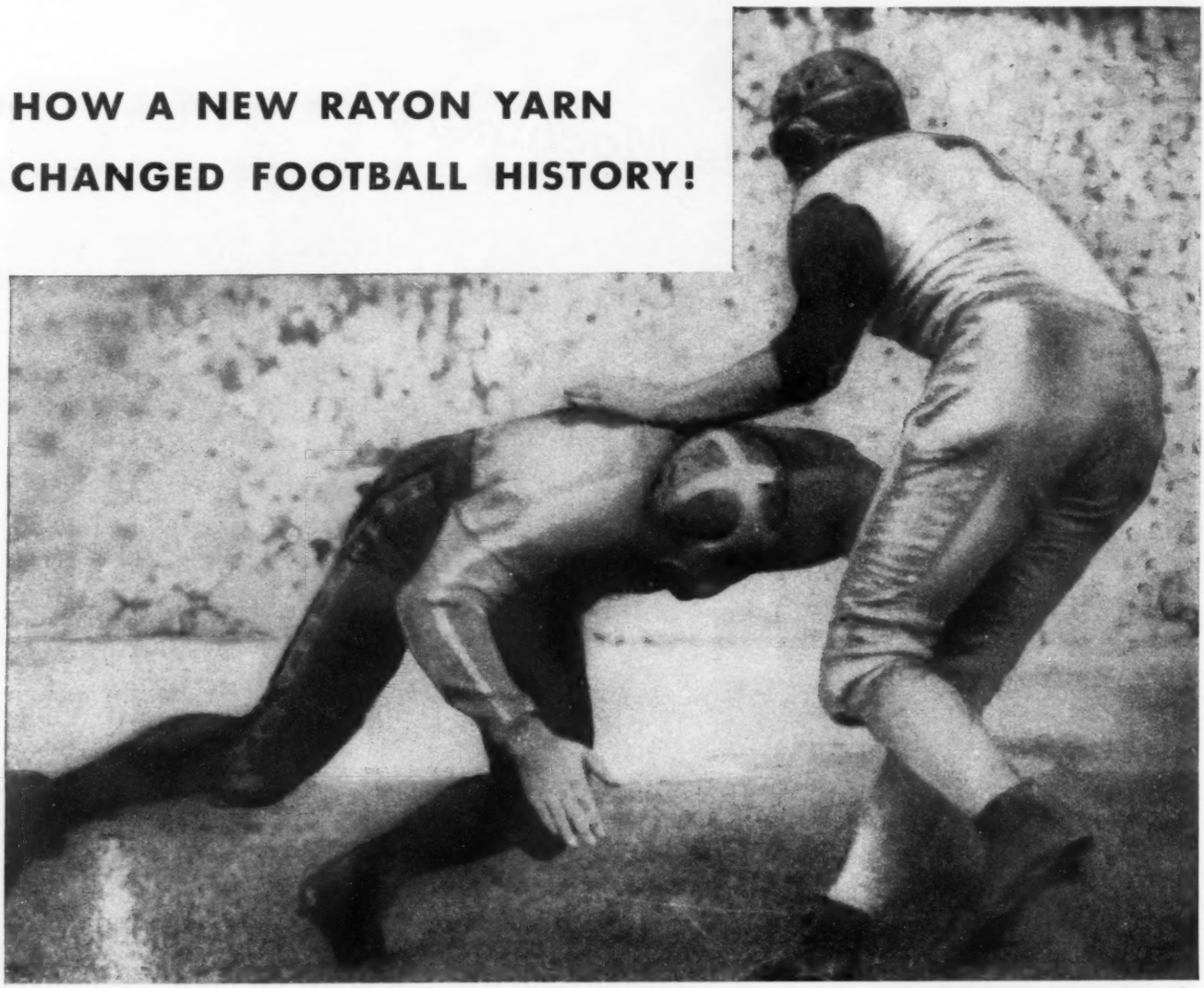
SPUR ... BEVEL ... HELICAL ... INTERNAL ... HERRINGBONE...WORM GEARS...WORMS ... RATCHETS ... ROLLER CHAIN SPROCKETS ... SILENT CHAIN SPROCKETS ... with cast or cut teeth...from cast iron, steel, and bronze.

Our organization maintains equipment and machinery for cutting all types and kinds of gears for the textile industry. These facilities enable us to produce gears at reasonable prices. Long services have proved their durability and dependability. Our extensive equipment enables us to render quick service.

Also manufacturers of special textile machinery, textile repair parts, slasher modernization equipment, and cloth room machinery.

WEST POINT FOUNDRY & MACHINE CO.
(Batson-Cook Company, Owners)
WEST POINT, GEORGIA

HOW A NEW RAYON YARN CHANGED FOOTBALL HISTORY!



†T. M. Reg. U. S. Pat. Off. by Wm. Skinner & Son

Skinner's "Tackle Twill"† made possible by Crown Tenasco, the high-strength rayon yarn*

Three years ago there was no "Tackle Twill." There was only Skinner's . . . and an idea.

The idea was for a new fabric that would be sturdy enough for football pants, light in weight, and smooth of surface to help elude tacklers. Skinner's fabric experts were sure that such a fabric would prove a success—if only they could find a way to make it.

With typical thoroughness, they tried out many fabrics—many yarns, weaves, and finishes. One of these far out-performed the others. It was tightly-woven twill, composed of 50% long-staple cotton and 50% high-strength Crown Tenasco Rayon Yarn. Tests showed it resisted punishing abrasion, and that it had all the strength and wearing qualities needed for football pants.

A SUCCESS? Last year "Tackle Twill" swept over the nation's gridirons like the razzle-dazzle system. Over half the leading college teams and many prominent professional elevens adopted it. Coaches and players alike praised its performance. And today, Crown Tested "Tackle Twill" is entering the apparel field, in rainwear, sports jackets, work suits, and other utility garments. Even the U. S. Army is using it in uniforms for parachute troops.

Skinner's tell us that "Tackle Twill" wouldn't have been possible without Crown Tenasco, our high-strength rayon yarn. The fabric, they say, owes much of its toughness and durability, as well as its smooth hard-to-grip surface, to this yarn.

THIS IS TYPICAL. In some cases Crown Tenasco has made possible the creation of entirely new fabrics, and in others, it has greatly enhanced the quality of existing fabrics.

Have you investigated what you can do with Crown Tenasco? Its added strength may be just what you need to convert a textile idea into a practical, profit-making fabric. Or it may enable you to introduce new sales-winning values into a fabric that you are now making. Write today for complete information.

Lustre Fibres, Ltd., 350 Fifth Ave., New York, N. Y. Selling Agents for

AMERICAN VISCOSE CORPORATION

World's Largest Producer of Rayon Yarn

CROWN TESTED AND APPROVED RAYON FABRIC

Sales Offices: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.

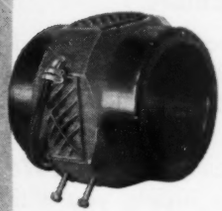
Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Parkersburg, W. Va.; Nitro, W. Va.; Meadville, Pa.; Front Royal, Va.

**Reg. U. S. Pat. Off.*

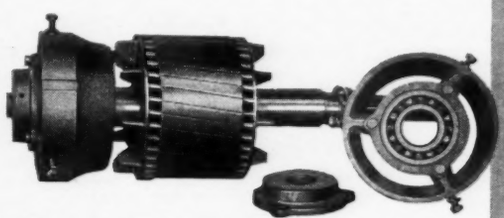
Copr. 1941—American Viscose Corp.

MONEY-SAVING FACTS ON QUICK-CLEAN MOTORS!

THEY BEAT LINT ...AND POWER BILLS, TOO!



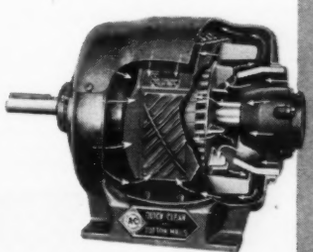
NO LINT OR FLY CAN ADHERE to the Quick-Clean's smooth, hard stator surfaces — a big factor in making these motors lint-proof and fly-proof. All working parts are dust-sealed. The stator, rigidly supported on the motor base, is easily removable . . . interchangeable. Note how coils are completely shielded—another important Quick-Clean feature.



INDESTRUCTIBLE ROTOR is mounted on ball bearings in sealed cartridge units that keep oil in . . . keep dust out. The Quick-Clean Rotor is silver brazed . . . and is rigidly supported on the motor base. Like the stator, the rotor is also removable as a unit . . . and can be interchanged readily. These rotor features combine to give long life . . . lowest possible maintenance.

RIGID FOUNDATION for Stator and Rotor is provided by the one-piece steel base and bearing support. Points of support for stator and rotor are accurately machined at one setting, insuring uniform air gaps. Extra protection is given the stator by an easily removable cover plate.

HERE'S THE QUICK-CLEAN PRINCIPLE! Dust-laden air drawn into motor is ejected at sides. Air passages are large and unobstructed . . . and all inside surfaces are glass-smooth, making it impossible for lint or dust to adhere. In Quick-Clean Motors you get full-measure construction throughout . . . extra-value performance that's bound to save you money!



A-1273

Find Out About Allis-Chalmers Quick-Clean Motors . . . and How They Solve Lint and Dust Problem in Hundreds of Textile Mills!

LINT, DUST and fly in textile mills were once the great obstacles to efficient motor operation. But that was before development of Allis-Chalmers Quick-Clean Motors.

Today—the threat of dust and lint clogging motors is gone forever!

Today — hundreds of up-to-date mill operators use these motors because they know they do a modern job for them . . . because they know Quick-Cleans have been tailor-made for their particular problems!

If you haven't already switched over your plant to Quick-Clean Motors . . . get the story about them at once! You'll be amazed at their smooth operation . . . their low cost for maintenance . . . their low power demand!

Read the facts in the panel . . . then get in touch with the engineer in the district office near you. Or write Allis-Chalmers, Milwaukee, for the complete money-saving story!

Over 90 Years of Engineering Superiority Work for You When You Specify Allis-Chalmers!

ALLIS-CHALMERS

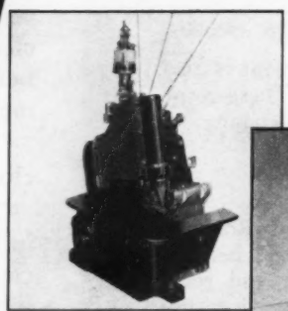
MILWAUKEE · WISCONSIN

YOU'RE AHEAD with new ON

DO you want to give your organization maximum advantage over rising costs . . . protection against time losses and maintenance expense . . . increased capacity to handle rush orders? You can get *all* of these benefits with new high speed Union Specials ON THE JOB in your sewing room!

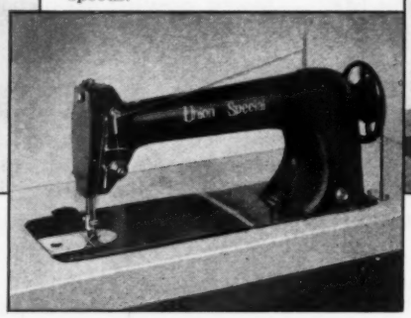
For years Union Special has held steadfastly to the principle of making industrial sewing machines to handle specific operations. To that specialization has been added continuous design development programs and finest engineering skill for the actual building of the machines. As a result, today's Union Special machines stand out as far ahead of their predecessors as those famous units were ahead of existing machines.

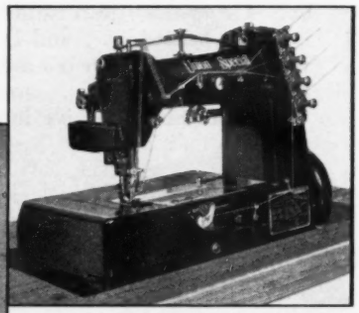
Let us help you get every advantage possible for your company. Union Special representatives are widely experienced in modern production practices. We will be glad to supply you with detailed information about machines. Write to UNION SPECIAL MACHINE CO., 438 N. Franklin St., Chicago, Ill.



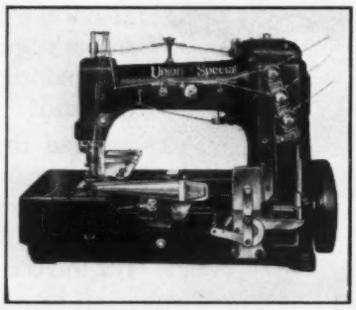
● STYLE 39200 AC—*(Above)* For seaming the lighter weight knit fabrics with the 3-thread Union Overseaming stitch, Type 504. Front tandem differential feed. Stitch range, 20 to 8 per inch. Built-in trimmer. Width of seam, 3/32" or 1/8".

● STYLE 61300 C — *(Below)* Union Special's popular Lockstitch machine for single needle, plain seaming on a wide variety of garments. 12-1/16" of space to right of needle bar. Perfect stitching at high speeds.



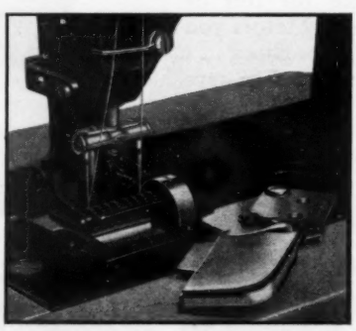


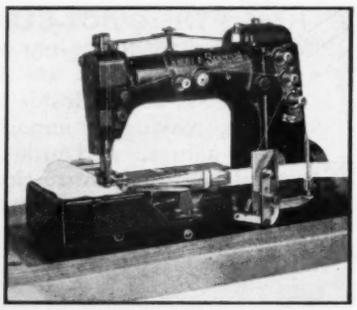
● STYLE 52800 B—*(Above)* For attaching cuffs to union suits, etc. Produces the one operation lap seam, Type FSa-1, with the 5-thread Interlock Stitch, Type 605. Features off-set differential feed and most efficient type edge guides.



● STYLE 52800 E—*(Above)* For attaching split tube borders to neck and armholes of athletic shirts. Style 52800 L is a similar machine equipped with a treadle operated mechanism for severing the border. Makes flat 4-thread Interlock Stitch, Type 602.

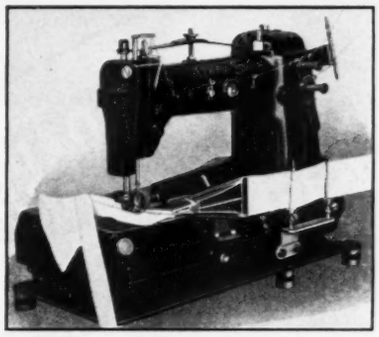
● STYLE 51700 L—*(Below)* For folding and attaching button hole facings to knitted undergarments. One operation, self-finish front. Photo shows close-up of strip controlled differential top feed.



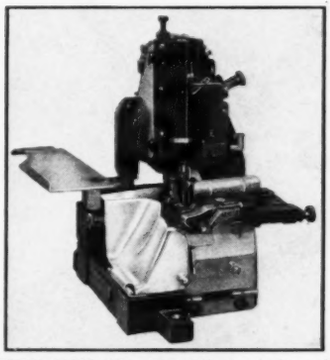


● STYLE 52100 A—*(Above)* For attaching split tube borders to neck and armholes of athletic shirts with double row, double locked stitch seam. Off-set differential feed. Treadle operated intermittent strip tension.

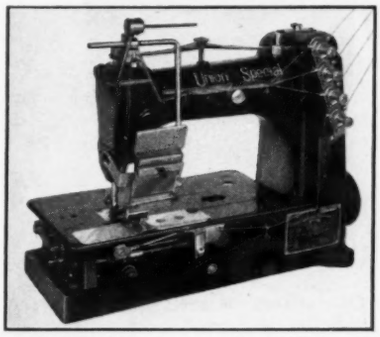
Union Specials THE JOB!



● STYLE 51200 V — For attaching woven button stays to knitted undergarments. Features a top roller feed, in addition to an under differential feed, which enables operators to produce beautifully flat smooth work.



● STYLE 39200 AS — For blind stitch welting or hemming of knit undergarments with 2-thread overedging stitch, Type 503. Cantilever throat plate mounting for tubular work. Swing out cloth plate for flat work. Style 39200 AV features retractable folded edge guide.



● CLASS 52700—For attaching long length elastic bands to all kinds of light weight knit garments. Style 52700 M has 3 needles and handles bands 7/8" to 2" wide. Style 52700 N is a 2-needle machine for 3/8" to 1-1/4" bands.

UNION SPECIAL MACHINE CO.

World's Largest Exclusive Builder of Industrial Sewing Machines

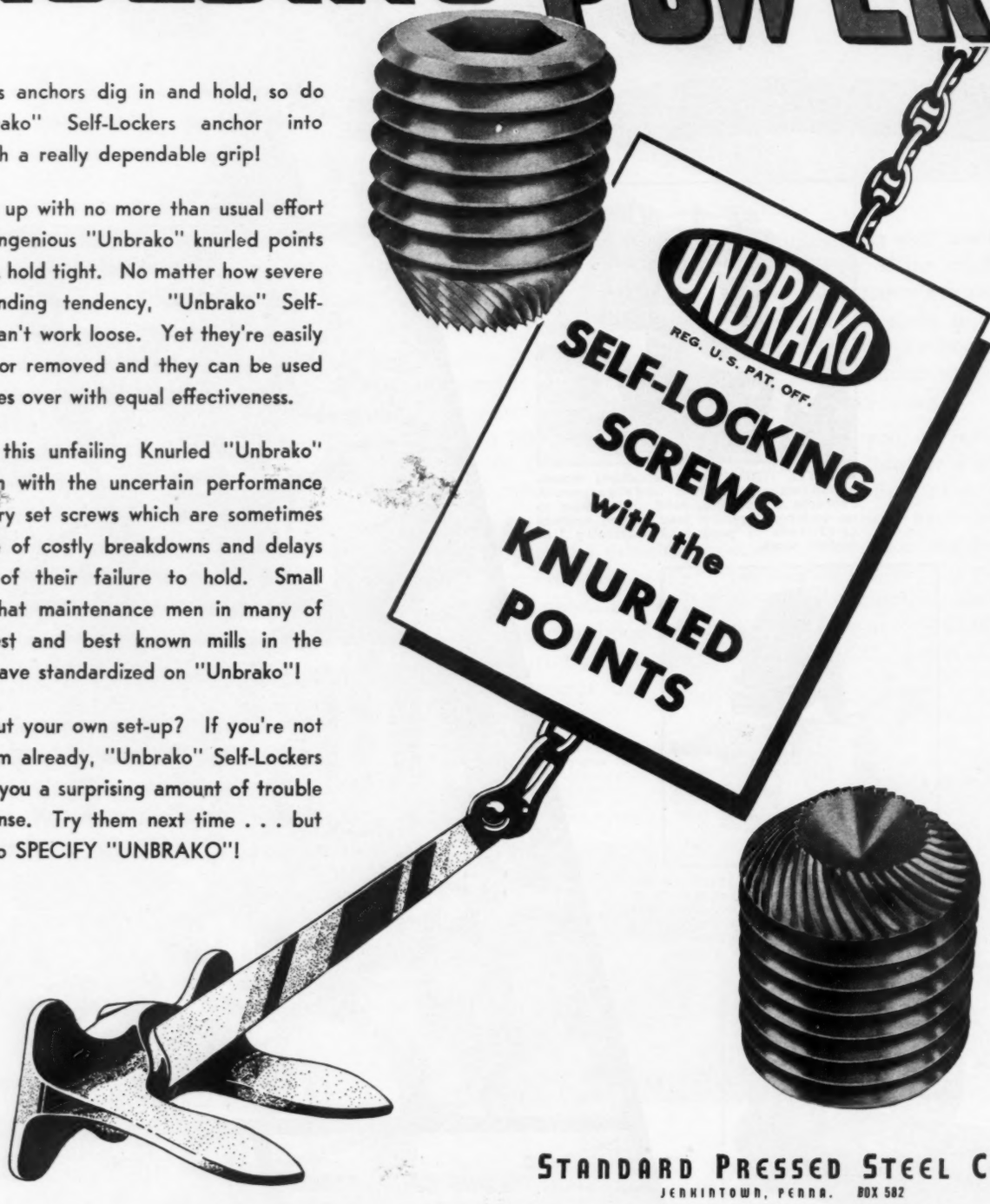
HOLDING POWER!

JUST as anchors dig in and hold, so do "Unbrako" Self-Lockers anchor into place with a really dependable grip!

Set them up with no more than usual effort and the ingenious "Unbrako" knurled points dig in . . . hold tight. No matter how severe the unwinding tendency, "Unbrako" Self-Lockers can't work loose. Yet they're easily adjusted or removed and they can be used many times over with equal effectiveness.

Contrast this unfailing Knurled "Unbrako" protection with the uncertain performance of ordinary set screws which are sometimes the cause of costly breakdowns and delays because of their failure to hold. Small wonder that maintenance men in many of the largest and best known mills in the country have standardized on "Unbrako"!

How about your own set-up? If you're not using them already, "Unbrako" Self-Lockers can save you a surprising amount of trouble and expense. Try them next time . . . but be sure to SPECIFY "UNBRAKO"!



STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 582
BRANCHES
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

Reg. U. S. Pat. Office
UNBRAKO *Screw Products*

Less Oil—

—when your looms run on SHELL TEXTILIS OIL It's 100% Lubricant

BECAUSE of its tenacious film, superior stability and unusual scouring characteristics, the Shell Textilis Oil used in loom lubrication . . .

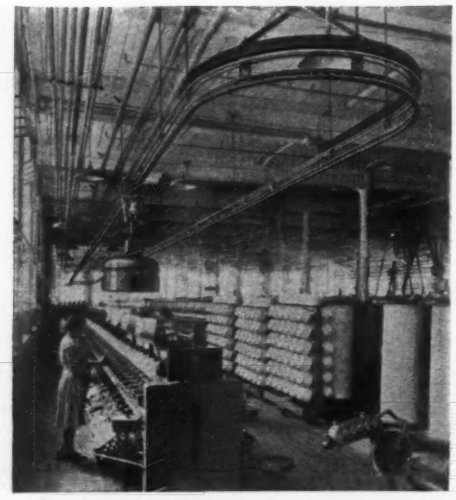
1—Reduces oil throw
2—Lubricates effectively with less oil
3—Does not clog oil holes and grooves —even in long, hard use
4—Easily removed from goods by ordinary finishing processes
5—Uses less power—cuts down wear

There are 14 Shell Textilis Oils—each one equally efficient in doing the work for which it was designed. Call in the Shell man now. Give him your toughest lubrication job. Watch him lick it.

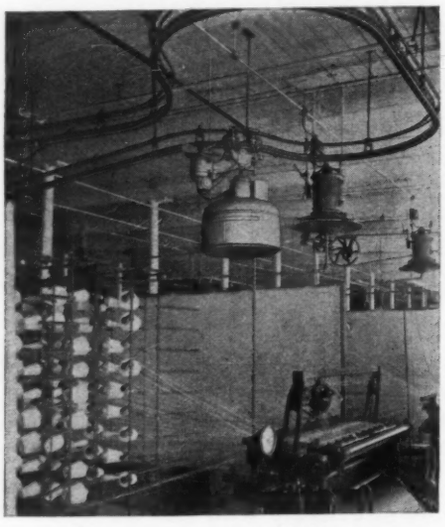
SHELL TEXTILIS OILS

You get more good yarn from modern machines with –

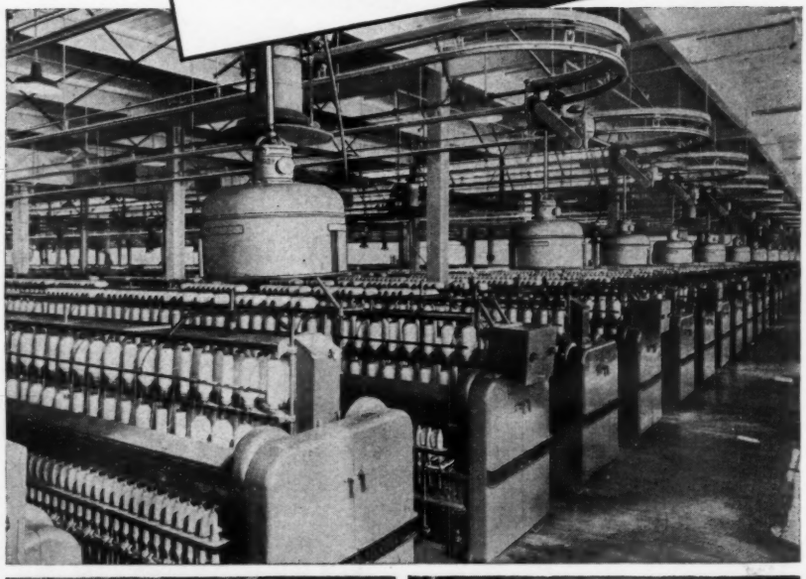
Controlled CYCLONIC Cleaning

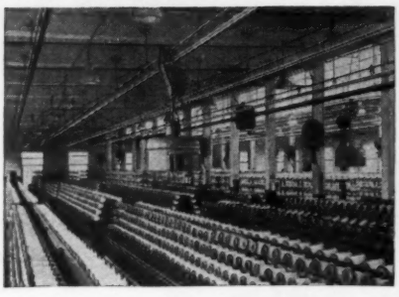


Clean yarn from winders means less breakage hence few bad transfers on the warpers.

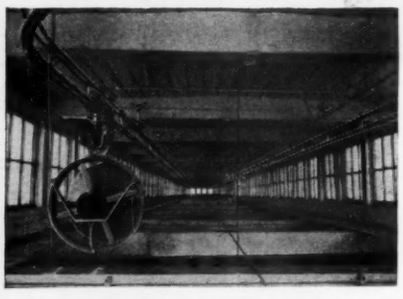


Every stop means lost production. Clean yarn keeps high speed warpers running smoothly.





Swirling columns of air circulate around cones to prevent lint accumulation.



High velocity fan travels within the monitor to keep this section clean.

Long draft spinning, together with modern high-speed twisting, winding and warping machines, all throw out more short fibers and thereby set up a lint problem.

Hand cleaning is costly since it limits the number of sides a spinner can handle and is the means whereby gouts get into the yarn.

Automatic cleaning with swirling currents of air, carefully directed, removes lint before it can accumulate. This means continuous production of clean yarn which in turn keeps subsequent machines operating at capacity. Let an American MonoRail engineer explain further advantages. Write for copy of 24 page book.

AMERICAN MONORAIL

OVERHEAD HANDLING EQUIPMENT

13106 Athens Ave., Cleveland, Ohio

APR 22 1941

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COTTON

SERVING THE
Textile Industries

Volume 105 APRIL, 1941 Number 4

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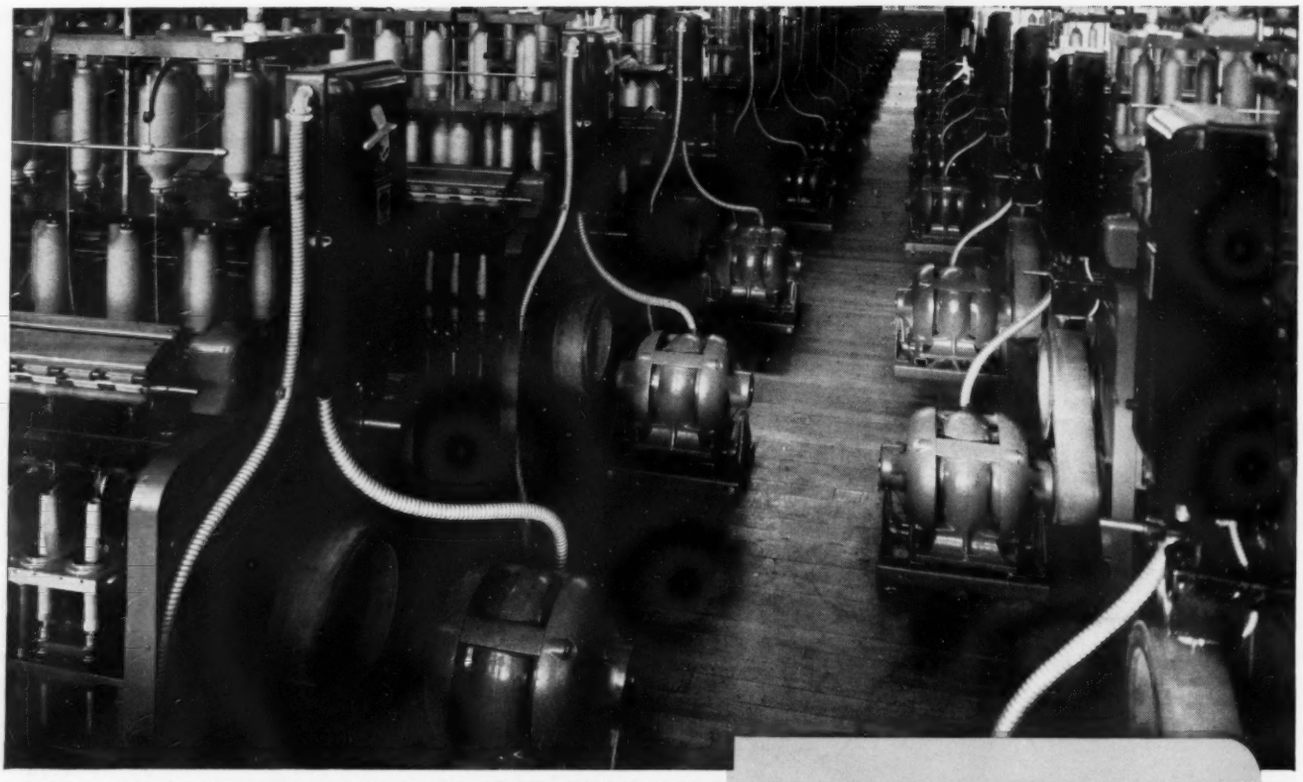


THE LUBRICANT STAYS IN - THE LINT STAYS OUT

That's Why *LINT-FREE* Motors Reduce Maintenance Costs...

Ball Bearings Are Permanently Sealed

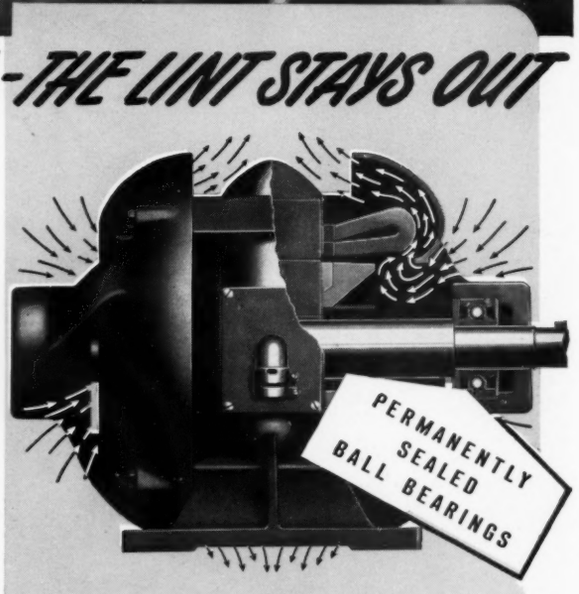
The lubricant is sealed in at the factory. No external lubrication is required. And that means overgreasing and the possible use of dirty or improper lubricant is eliminated. There is never any need for maintenance men to leave drops of grease or oil on the housing and provide a "home" for lint. There are no grease fittings or other projections on which lint might catch. And with sealed bearings, the housing is smooth and round . . . easy to wipe off.

Unobstructed Passages Let Air Circulate

Air passages are exceptionally large. The inner surface of the end brackets is sanded, filled and then finished slick and smooth with a special high-gloss, hard-drying enamel. There are no pockets or corners in the passages where lint can pile up. Lint goes in, through, and *out*.

Windings, too, are finished smooth as glass with a special baked-on varnish, to prevent lint from sticking.

Leading textile mills everywhere are using this Westinghouse Lint-free Motor. Hundreds have already been installed. Results show better production because maintenance is less. For complete details on how you can use it in your mill, see your Westinghouse representative.



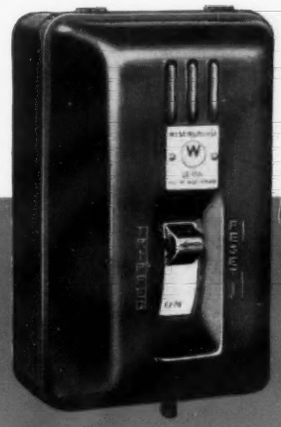
Note the large, unobstructed air passages and compact construction of the sealed ball bearings. Westinghouse engineers have taken full advantage of every construction detail that would help to make this the cleanest running textile motor available.

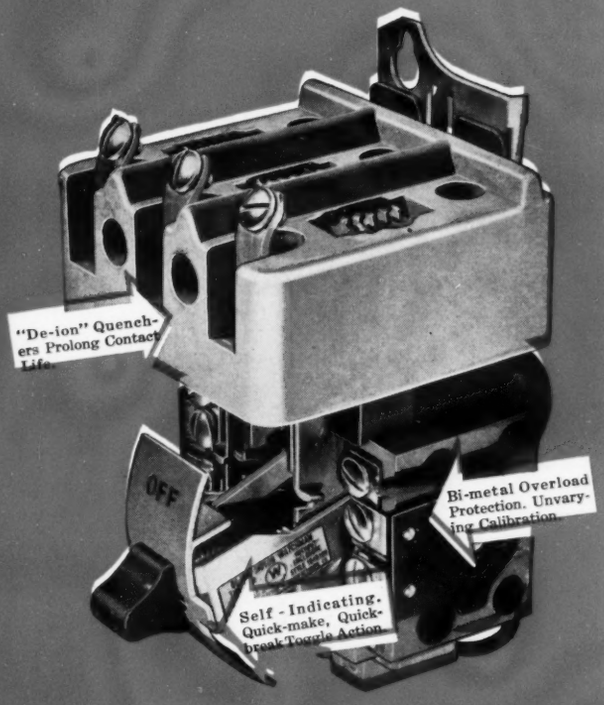
Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. J-21116

Westinghouse Lint-Free Motors

IT'S EASY TO see

"ON" "TRIPPED" "OFF"




"De-ion" Quenchers Prolong Contact Life.
OFF
Bi-metal Overload Protection. Unvarying Calibration
Self-Indicating. Quick-make, Quick-break Toggle Action

WITH THE WESTINGHOUSE LOOM SWITCH MANUAL MOTOR STARTER

For Motors Up to 7½ HP
Class 10-100

Easy to Install

Compact design but with ample wiring space. Concentric knockouts on top, bottom, sides and back make installation easy. Top screw holes in back of cabinet are keyhole-shaped. Bottom holes oblong for quick lining up. Straight-through wiring—line to top —load at bottom.

Lower Maintenance

"De-ion" quenchers prolong contact life. Bi-metal provides unvarying accurate overload protection. Trip-free switch—cannot be held closed against overload. Quick-make, quick-break prevents "teasing". All metal parts tinned or cadmium-plated. Silver-to-silver, double break contacts. Deep-drawn cover and contact inspection window on arc quencher make maintenance easy.

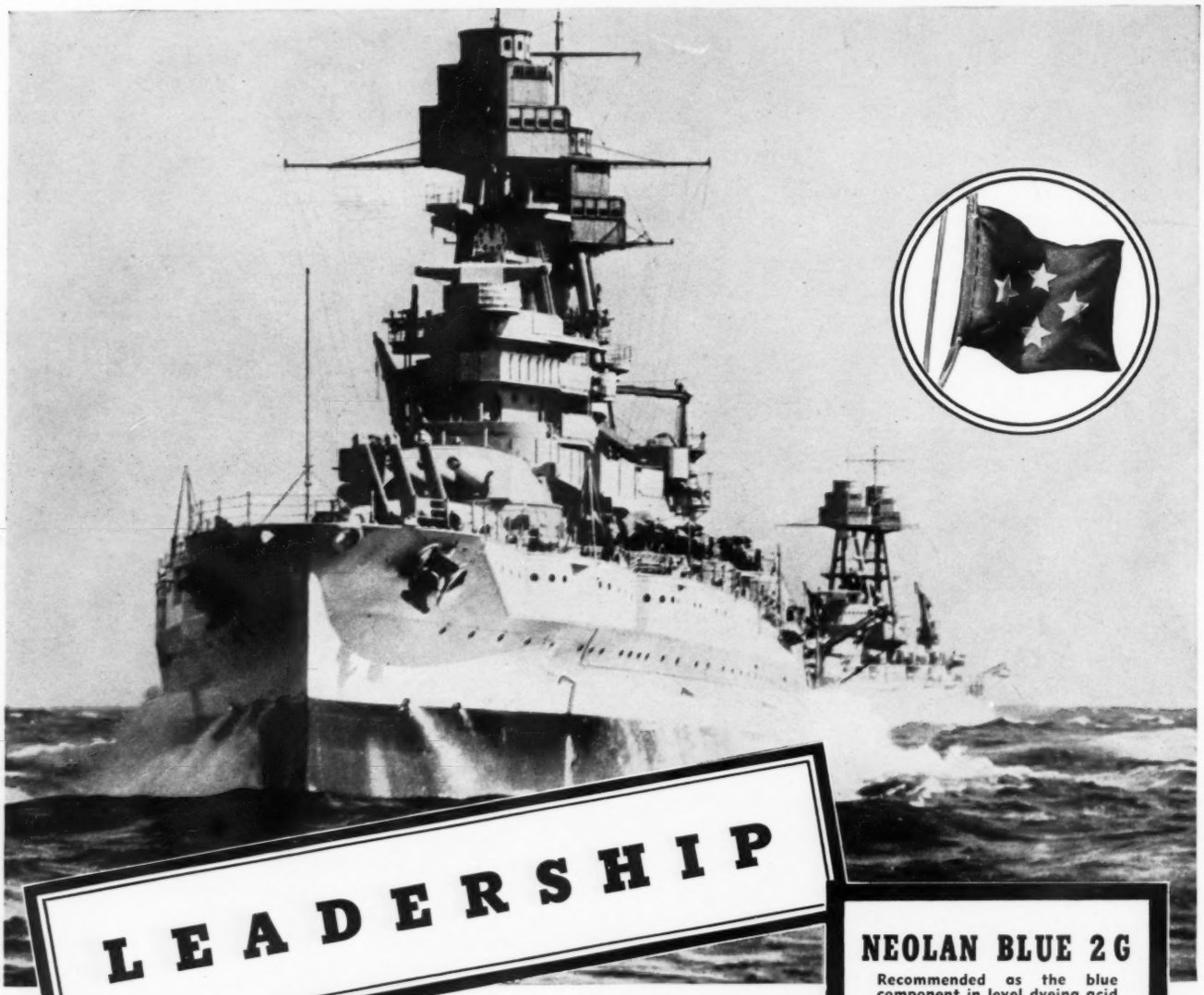
Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa.

J-21151

Westinghouse

"DE-ION" LOOM SWITCH

W WESTINGHOUSE ELECTRIC



LEADERSHIP

THE Battle Fleet ploughs over the cold green wastes of the Pacific. As that long grey line of grim battleships storms past, note the four-starred Admiral's flag flying at the main of the leading ship. On the bridge is the Admiral himself—grey, seasoned by years of service—wise in the ways of sea-warfare. His quiet word can lead this silent armada on its peaceful way—or instantly transform it into a mighty, roaring thunderbolt for our country's defense. The four stars on his shoulder-boards prove his quality of LEADERSHIP.

And the familiar octagon trade mark is the symbol of Ciba's leadership in the field of dyes and chemicals for the Textile Industry.

THE CIBA LABORATORY EXISTS TO SERVE YOU. Ciba Chemists, Colorists and Service Technicians are ready at all times to cooperate with you in the solution of your problems. Please feel free to call upon them.

NEOLAN BLUE 2G

Recommended as the blue component in level dyeing acid combinations.

Note These Advantages:

GOOD FASTNESS TO WASHING

RESISTANCE TO PERSPIRATION

FASTNESS TO SEA WATER AND WEATHER

GENERAL ALL-AROUND FASTNESS TO WEAR

DISCHARGEABILITY WITH HYDROSULPHITES

VERY GOOD LEVELLING AND PENETRATION

AN ECONOMICAL WAY OF MAKING FAST COLORS ON WOOL

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Vat Dyes of . . . *Sole Representatives of . . .*

THE DOW CHEMICAL COMPANY • SOCIETY OF CHEMICAL INDUSTRY IN BASLE

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SHORTS AND REMNANTS

In the Spring

"In the spring a young man's fancy lightly turns to thoughts of love," says the poet. But that was one Mr. Tennyson, and that was another century. For in the spring of 1941, the fancy of young men, and of others not so young, turns more heavily to thoughts of shot and shell, of drilling, tanks, airplanes, arms, and modern warfare. For the United States of 1941 is rapidly becoming an armed camp, and the nation is moving together, in spite of disturbances here and there, toward the creation of a machine that many feel, and some hope, may be more than a machine for defense.

Regardless of one's feelings toward this war and toward any war, it is a shocking commentary on the progress of civilization that human beings who have progressed so far in science and invention have made no more progress in human relations and in national relations. Man, who has harnessed the tides and earth's products to provide electrical current to help him work, who has conquered disease, and invented books, telephone, wireless, to disseminate knowledge to the four corners of the globe, still goes to war. Small nations are drawn in because they are dependent upon other, larger nations. Larger ones join in, because they are too large and too involved in the consequences not to join.

Thus, the poet's song of 1941 is a militant one, of armies and navies, and this is a textile column and not a sounding board for oratory either pro or con. And regardless of basic fundamentals behind the building of armies and navies, the nation's textile industry plays an integral part in that building. Maybe "an army travels on its stomach", and certainly trucks, tanks, and automobiles are predominant today, but the boys tell us that they still do a lot of old-fashioned "squads right" drilling, and that means a lot of socks, and they still wear underwear, we understand, so much of the talk at this month's Knitting Arts Exhibition in Philadelphia will involve army and navy needs, and how they are being met.

Spirit of Co-Operation

"I merely discussed the subjects . . . in the spirit of co-operation with your splendid publication. We certainly enjoy receiving COTTON. . . . "

R. H. MOELLER
Vice-President,
Larkwood Silk Hosiery Mills, Inc.,
Charlotte, N. C.

(This same spirit of co-operation is the backbone of the interchange of operating and production information published regularly for all classes of textile mills under "How Other Men Manage" and "Knitting Kinks". More mills throughout the U. S., Canada and South America are participating today than ever before, so read them over and "come on in, the water's fine".)

◆

Textile Printing

"Inasmuch as I find these articles, 'A Description and Study of Textile Printing', by C. Norris Rabold, invaluable for my files on textile printing, I will endeavor to type copies of the clippings you loaned me."

ROBERT A. LEMIEUX
Textile Chemist,
Greenwich, Conn.

(Extra copies of this series exhausted by previous demand.)

◆

Eh?

"That was an interesting group of snaps taken at the conference of textile association heads and run in your February issue. . . . "

DOUGLAS G. WOOLF
Editor-in-Chief,
"Textile World",
New York City.

◆

Leads All on Synthetics

"Thinking back about five years, I remember arguing that COTTON was of no value to me as no articles on rayon or synthetic blends were ever printed. Well, I have to take all that back now as it leads all others. . . . "

FRANK CROSSLEY
Adams, Mass.

Bleachers' Needles

"We are in the market for two gross bleachers' needles, steel 5 inches long, No. 14 or 13 B. W. gage. . . . "

DOMINGO S. MENDOZA
Manager,
Philippine Cotton Mills, Inc.,
Manila, P. I.

(This inquiry was referred to Astrup & Co., Cleveland, Ohio. Any other manufacturer of bleachers' needles please submit samples and prices direct.)

◆

Lasting Beauty

We hope that they don't write and tell us that this is Miss America again under a hood, but Scholler Bros., Inc., and R. E. Lovekin Corp., advertising agency, seem to have another winner in the above advertisement ("Cotton," March 1940), which was selected from among some 300 entries in the 1941 Exhibition of the Advertising Art Directors' Club of Philadelphia to receive one of two awards. The aloof beauty and cathedral got together for first among all advertising illustrations in the balloting of over 40,000 attendants.

Knitting Mills Use Booklet Page

Knitting mills throughout the Americas—U. S., Canada, and South America—made use of the services offered in the booklet pages of COTTON (Serving the Textile Industries) in 1940, and are continuing to do so in 1941. This feature has been re-designed for your convenience and offers valuable aid and assistance in manufacturing and in the selection of equipment in the nature of advertisers' literature offered. Turn to page 119 and look them over. Among the knitting mills writing for booklets from this page in 1940 were:

Caswell Knitting Mills, Inc., Yanceyville, N. C.; Belknap Mills Corp., Laconia, N. H.; McLaurin Hosiery Mills, Inc., Asheboro, N. C.; Jacquard Hosiery Co., Wellington, New Zealand; Michael A. Doura, Buenos Aires, Argentina; Sedalana S. A., Buenos Aires, Argentina; Commonwealth Hosiery Mills, Randleman, N. C.; Union Mfg. Co., Union Point, Ga.; Dixie Hosiery Mill, Mt. Gilead, N. C.; Wiscassett Mills Co., Albemarle, N. C.; Standard Knitting Mills, Knoxville, Tenn.; Danville Knitting Mill, Bon Air, Ala.; Diamond Full-Fashioned Hosiery Mill, High Point, N. C.; Van Raalte Co., North Tonawanda, N. Y.; Alabama Hosiery Mills, Decatur, Ala.; Holeproof, Ltd., Melbourne, Australia; Melrose Hosiery Mill, High Point, N. C.; Carroll Silk Hosiery Mill, Hillsville, Va.; Siler City (N.C.) Hosiery Co.; Nolde & Horst, McMinnville, Tenn.; Del-Mer Hosiery Co., West Oak Lane, Pa.; Stone Knitting Mills, Cleveland, Ohio; Lee I. Robinson Hosiery Mills, Philadelphia, Pa.; and D. S. & W. Knitting Mills, Reading, Pa.

◆

Wants Nylon Articles

"We would like very much to have the articles on nylon hosiery (published in the May, Sept., and Nov. issues of COTTON)."

A. M. BRYAN
Treasurer,
Bryan Hosiery Mill, Inc.,
Chattanooga, Tenn.

◆

Interest in Komet Articles

"We have been very much interested in the articles you have been publishing in regard to the Komet machines. . . . "

W. F. CONNOR
Vice-President,
Hub Hosiery Mills,
Lowell, Mass.

◆

Turning Welts

"I would like for you to send me 54 reprints of the article, 'A Mill Superintendent Shows His Method of Turning Welts' (Jan. 1941 issue of COTTON)."

WM. M. GROSSE
Superintendent,
Griffin Hosiery Mills,
Griffin, Ga.

◆

Nylon Is Now "Made in Canada"

"In your issue of COTTON, Jan. 1941, page 134, you mention that nylon stockings are already on sale in Canada, but they are of U. S. A. manufacture. . . . On January 15 nylon stockings 'Made in Canada' went on sale across Canada."

P. H. KOYAN
Production Mgr.,
Belding-Corticelli, Ltd.,
Montreal, Canada.

CUT OUT PROCESSING STEPS

WITH THE NEW DEGOMMA FINISHING PROCESS . . .

IF you would like to save time and money in finishing colored yarn fabrics, get the facts on the new DEGOMMA Finishing Process!

This plant-proved process eliminates the costly steps of washing out the size and then resizing with new starch. *Instead, DEGOMMA converts the stiff size to a soft finish without loss of weight.* Savings up to 25 points in weight are obtained by this new processing method.

Only with DEGOMMA is this finishing process possible—because DEGOMMA is a *colorless, odorless* powder.

If you are processing colored yarn fabrics, the DEGOMMA Finishing Process can be readily adapted to your mill conditions. Our representative will gladly go into full details with you. Call him in immediately, or write us directly.

CHECK ON.. **DEGOMMA FINISHING PROCESS** ..AND SAVE

RÖHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes.. Enzymes.. Crystal-Clear Acrylic Plastics.. Synthetic Insecticides.. Fungicides.. and other Industrial Chemicals

COTTON
SERVING THE
Textile Industries

Vol. 105 April, 1941 No. 4

AN AVERAGE AMERICAN BUSINESS MAN'S

Platform for Preparedness

EVER SINCE France fell last summer, this has been our war. The political and economic doctrines of Nazism and Fascism are totally abhorrent to a nation composed of free men. While we could undoubtedly live in a Nazi dominated world, it would be difficult, disagreeable and expensive living; and it is unquestionably better, cheaper and safer for us to help maintain an established order in which other free nations participate, than to have to stand almost alone against a world controlled by alien and detestable practices. So, we have really been in the war for about nine months, and we have been getting deeper and deeper into it all the time. With the passage of the so-called "Lease-Lend Bill" we have merely recognized our unavoidable participation.

To make this participation of the utmost value, and to get the most results with the least effort, we need speed and intensity in our activities. We need to get to our fellow free-men in Britain and Greece enough help to turn the tide of war in their favor, and we must do this quickly. The nation has on its hands the most trying job since the War Between the States, and it requires national unity of purpose and of effort to complete this job satisfactorily and quickly.

As a platform for speeding up the defense program, we believe:

In Curtailing the Power of Any Organization to Hamper the Defense Program.

Hitler has boasted that he can disrupt any American preparedness effort with the greatest of ease through subversive agents working within well-known American organizations. This is a job for the police and the F.B.I., and for patriotic citizens who not only can help to combat such foreign propaganda, but should report to the proper authorities persons who seem to be suspiciously engaged in stirring up discord or promoting sabotage. There have been several Nazi and Fascist organizations that have flourished in this country, and which will have to be closely watched and sternly curbed if discovered in any obstructive tactics. The present privilege granted to labor unions of calling strikes for any or no reason must be drastically curtailed.

In Carrying Out the Defense Program as Economically as Possible.

To do this requires the prevention of an epidemic of inflation. Wages and profits have got to be kept under control. The greatest danger of inflation comes from a widespread demand for wage increases on the assumption that everybody ought to get rich out of the defense program. Nobody should get rich out of it. A carefully worked out excess profits tax ought to be enacted at an early date to destroy completely any incentive to profiteering on the part of industry. Any excess profits tax is bound to work some injustice and cause some hardship to young and growing concerns, but if inflation becomes rife, that will cause a lot more hardship, more widely distributed. Our national leaders have repeatedly pointed out that we must all make sacrifices to put through this preparedness program, but a great many of us think that the kind of sacrifice to be made is to settle for a 20 per cent increase in wages instead of getting 50 per cent.

In Allowing Every Citizen to Participate in the Defense Program, Regardless of Affiliation with Any Particular Organization; the Communist, Nazi, and Fascist Parties Excepted.

We certainly do not want members of alien political organizations mixed up in vital defense enterprises, but aside from barring such people from defense work, there should be no other restrictions, and no man should be required to belong to any particular labor organization in order to qualify for defense work, and no labor organization should be granted the power to compel membership as the price of a job.

In Determination by Proper Public Authorities of Fair Wages and Working Conditions on Strictly Defense Projects.

It is perfectly feasible for the Federal authorities to set fair wages and working standards on defense

jobs, and then operate them on a strictly open shop basis. Those who don't like this arrangement can find work elsewhere in more congenial surroundings. Defense work is national work; it belongs to everybody, and is not the prerogative of some privileged groups to monopolize for their own selfish purposes.

In Elimination of Strikes on Defense Jobs, While Protecting the Constitutional Right of the Individual to Quit His Job Any Time He Wishes, for Any Reason or No Reason.

Labor organizations often refer to "the right to strike". They are mistaken. A strike is a privilege and not a right, and it is a privilege which can be revoked at any time by the will of the people. Each individual has a right to quit his job, which is a right and not just a privilege, but when a group of individuals conspire to force other individuals unwillingly to quit their work, they are exercising a privilege and not a right. There is nothing in common between a man quitting his job, and a strike. In a strike, the strikers are not giving up their jobs; they are merely trying to make it impossible for the jobs to be done, in order to force the granting of certain demands which have been made. It hardly seems possible that the public will long tolerate such episodes as the strike at Dayton which stopped work on a whole army airfield project, threw thousands of people out of work, and delayed the national defense program materially, when nothing was involved except a wretched dispute over whether five men belonging to an alien union should be allowed on the job. Another example is the strike in a small California die-casting plant where approximately 450 people have virtually halted the work of more than 100,000 men on airplanes so vitally needed for the nation. Things like this simply do not make sense, and they must be stopped.

In Elimination of the 40-Hour Week for the Duration of the Present Emergency.

It seems ridiculous to spend precious months and hundreds of millions of dollars training inexperienced men for defense jobs while millions of highly skilled workers could put in at least 10 hours a week more time, to the profit of themselves and their country. The time and a half provision for overtime should be eliminated and a 48 or 50-hour week adopted at once.

In the Elimination of All W.P.A. Projects.

The W.P.A. was presumably a child of the depression and an awkward attempt to spread employment in times when it was scarce. The W.P.A. projects have often been extravagant, and frequently ill-advised. Being undertaken with public money, the various states and their officials have tried to see how much they could get out of the public purse with no thought of prudence or economy. The W.P.A. has now largely degenerated into a political proposition, and should be discontinued. Its continuance at such a time as this is an admission that it is merely part of a political machine and is to be continued indefinitely so long as there is a United States. With a general shortage of labor and an increasing need for defense production, the W.P.A. projects are an anomaly and a scandal. They are as illogical as a man building a steam heated swimming pool while the sheriff is foreclosing a mortgage on his home.

In the Elimination of Federal Relief.

This is subject to the same criticisms that can be directed at the W.P.A. Relief is, always has been, and always will be, a local problem. To try to handle it any other way is to invite the establishment of a political racket, and to assure a great deal of waste. The money for everything in the long run must come out of the incomes of the taxpayers, and it is up to each community to determine how much that community wants to contribute to the relief of local destitution. When the Federal Government begins to subsidize destitution, it becomes a respectable profession contrary to good business, good taste, and self-respect.

In Maintaining Normal Consumer Production Insofar as This is Possible.

What we have to sacrifice, we must, but there is no use to sacrifice anything we don't have to. The United States is a vast productive organism and if not choked off by artificial restraints, our productive machinery can turn out most of the things required for consumer use and also take care of the defense production. The United States can do this if it can prevent income inflation and refuses to restrict productivity by limiting the individual's output. Income inflation at this time will result in increased consumer demand beyond the point of industry to take care of it, and it must be remembered that any increases in income as a result of preparedness are purely inflationary. All of this preparedness money is borrowed money, and the spending is deficit spending. If everybody works as many hours as can be worked without impairing health or morale, and if we get the things we need by producing them instead of by raising wages to try and buy stuff that doesn't exist, we can greatly minimize the sacrifices that must be made to attain our military needs.

Keep Ahead of Your Employees

Supervisors, keep a jump ahead of the people you supervise. The average worker is much better educated today than he was ten years ago. The level of education of employees throughout the country is rising. Five years from now it will be still higher.

Scarcity of jobs during the past ten years has prevented young people from getting jobs. The only thing that thousands of them could do was to remain in school. Results—many more people entering ranks of industrial employees with at least a high school education. This means foremen, supervisors and department heads will be dealing with employees with better trained minds than a few years ago. All the more important to use leadership rather than "drivership" to get results.

This rising level of education among employees may require that supervisors use some of their spare time to brush up on subjects not covered in their own schooling.

The Problem of Training and Adapting New Men in Industry

The new man problem is once more a problem in industry—at least, in a large proportion of industry. The last several months have seen the hiring of approximately 1,500,000 men in industry. That's a lot of men to be broken in.

True, a great many of these men are being re-employed at jobs on which they worked before and often by the same company. Still, the man who has been away from a job for months or years needs to be given much of the same kind of consideration that a brand new man should get.

In absorbing new men, make them feel at home, give them instructions carefully, patiently, and clearly; re-emphasize safety, and remember that *the impression they get of you* is just as important as *the impression you get of Them.*

These items taken from "Management Information", published by Elliott Service, Inc.

The Pneumatic Loading of Textile Machinery

The use of controlled air pressure on squeeze and press rolls

By Ralph Hayden, Jr.
The Foxboro Company

WHEN the textile industry had its first installation of pneumatic loading something less than two years ago, the event attracted no particular attention. But there were those in the industry who recognized it as the beginning of a new approach to the solution of an ancient problem. A new implement was made available to the textile operator, enabling him to achieve a better result. And a process in which variations were accepted as unavoidable, came under complete and accurate control.

Application

This first installation, entirely successful, was promptly followed by others. During the past year, one manufacturer of mill machinery has made more than thirty installations of various kinds. Pneumatic loading is now being used in textile mills on dye padders, cloth washers, starch mangles, slashers, and other squeeze roll machines.

Materials being processed under pneumatic control include fine shirtings, canvas, plush, raw stock, worsteds, worsted warps, and rayons of various types. Dye, acid, soapy water, size, and finishes of various character are some of the liquids handled in these squeeze roll processes of penetration or extraction. The wide diversity in the few applications listed here is an indication of the many additional applications that are still to come.

Principle of Pneumatic Loading

The engineering principle of pneumatic loading is a simple one: air pressure, measured and under constant control, is applied to the upper roll, to establish a nip of the desired value.

There is nothing new about this principle of engineering, and nothing basically new in the equipment; the paper industry had already discovered the advantages of pneumatic loading, and equipment had already been developed to meet that industry's loading problems. It has been relatively simple to transfer the engineering practice from the paper industry to the textile industry for, though each installation presents its particular problems and must be individually engineered with consideration for these problems, the principle of pneumatic loading is fundamental and applicable to roll equipment of almost any kind.

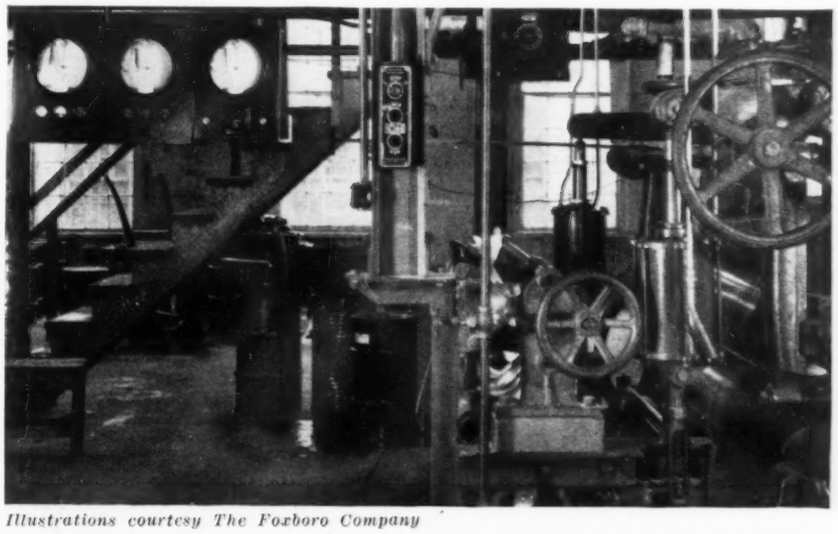
Pneumatic loading presents a cushioned pressure, with a self-adjusting compensation for variation in the material thickness or out-of-roundness in the rolls, the loading device being free to move and conform to the eccentricity of the roll. It is free from inertia, and is free to yield in conformity with the requirements of the materials and rolls, exerting a constant, uniform and measured pressure at whatever value the operator desires.

Within the past three years there have been applied several hundred pneumatic loading systems for roll machinery in different industries. The distribution of this total number over the three year period shows a rapidly increasing rate in the more recent months, a trend which is largely explained by the active interest of the textile industry in the advantages offered by pneumatic control.

Results of Pneumatic Loading

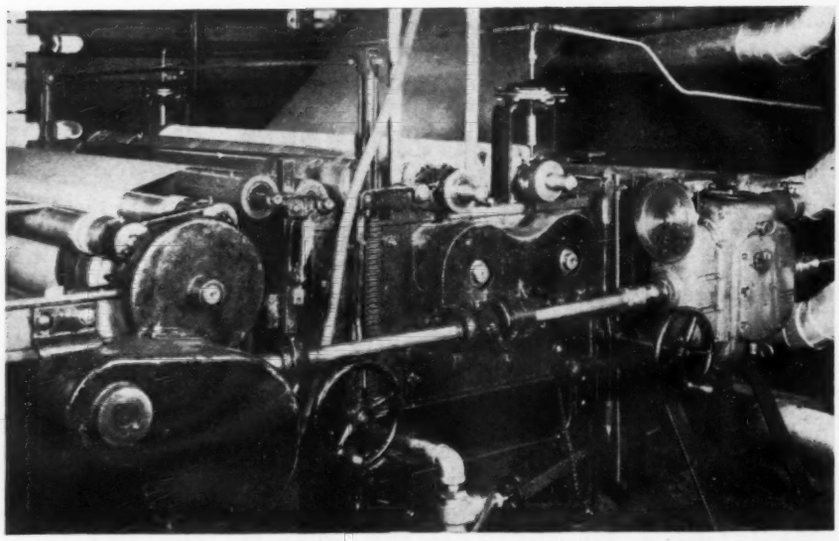
The advantage which is immediately noted is that pneumatic loading is convenient. Precision is the next advantage gained. The operator sets the air regulator on his control panel, to establish at each end of the roll precisely the nip desired, and turns the air switch. That is all he has to do. In such a process as mercerizing, where the operators have good reason to keep away from the equipment, the value of this long-distance control is conspicuously evident.

With the nip set at the desired



Illustrations courtesy The Foxboro Company

An installation of the pneumatic loading system in a dyehouse. One of the air cylinders by which the roll pressure is applied is seen between the two hand-wheels of the machine. At upper left are the control instruments, the one at the right being the load recorder and the other two temperature controllers on nearby dye vats.



Pneumatic loading on a slasher. The accurately measured pressure which is applied to the last pair of squeeze rolls permits the operator to get exactly the desired degree of impregnation in the slashing process, and recording instruments present a record for future reference or test.

value, and operations begun, other advantages become apparent. Operating speed is increased. In fact, so far as the loading system is concerned, there is no speed limit; it operates with equally satisfactory results at whatever speed is best and most efficient for the processing machinery.

Recording Instruments Permit Duplication of Processing

The next improvement noted is in the quality of the work, with closer uniformity in results because of uniformity in processing conditions. One of the very first installations was made on a dye padder, which preceded a dyeing range and was used on fine shirtings, dyed with reduced vat colors. Light pastel shades were handled without difficulty, and without variations in shade in the finished cloth due to nip variation. A file of charts from the load recorder, with samples of the processed cloth, now provides a daily history of operations and facilitates duplication of conditions whenever desired. So far as the dye padder nip is concerned, it is only necessary to set the pressure at the same value as shown by the pen record on the earlier chart.

Another feature of this installation was the ease and facility of unloading and separating the rolls when the machine was stopped. By a turn of the air switch, the air pressure is reversed, from the top of the cylinders to the bottom, giving the rolls a pneumatic lift. In the opinion of the operators, this is one of the outstanding features of the installation. It is a feature of value in most applications, but of special importance on dye padders because of the nature of the rolls. The soft roll of a padder may quickly develop a flat surface if left under pressure when the machine is idle. When a roll is left standing, loaded, and develops a flat, a good many yards of cloth must be run before the roll is worked back into proper roundness; which means that considerable yardage must be run under imperfect conditions and with less than perfect results, before proper operating conditions are restored.

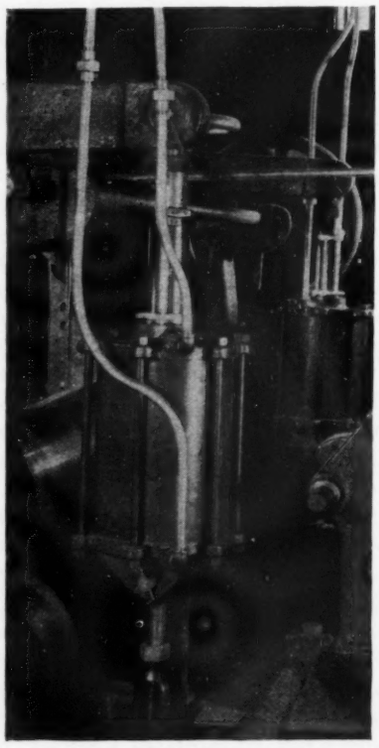
Other features are that it is possible to set the nip with extreme precision (even within a range of one pound of pressure.) The pressure can be equalized at both ends of the roll, or if desired, the two ends can be separately loaded with pressures appropriate to peculiarities of the roll, the mechanism which drives it, or the material being processed. Whatever the setting may be, the control system will hold that adjustment, faithfully and precisely, with no human supervision or manipulation of any kind.

The control panel can be located wherever is most convenient for the operator, as the connection between the regulator and the pressure cylinders consists only of flexible tubing or of pipe carrying air, and this tubing can be of any desired length. And, along with the convenience of the pneumatic method should be mentioned its cleanliness. Even in case of accidental breakage of the tubing, there would be no puddles, no overhead drip.

Whether the process is actually one of sizing, washing, padding, or removing a liquid, pneumatic loading applications may be broadly classed as processes of impregnation or extraction. In either classification, the benefits gained will follow a certain order, and it is therefore possible to form in advance some estimate of the value of these expected gains.

Extraction or Impregnation

If material is being squeezed for the extraction of liquid, greater overall extraction is obtained. More uniform extraction results from the more uniform pressure; and in subsequent operations, such as drying, there will be less variation in the moisture content of the material, and the dryer can be operated at higher speed, since there will be no need to slow it down to take care of wet spots. Higher speed for the roll machine is possible, because with the cushioning effect of the pneumatic pressure, any bouncing

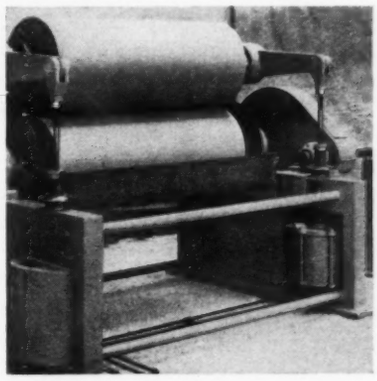


A close-up of the air cylinders at the two ends of the squeeze roll in a dyehouse. Note that the air lines are connected at both top and bottom of the cylinders. When the machine stops the operator throws the air switch, reversing the air pressure, and the squeeze roll is pneumatically lifted free of contact with the lower roll.

is snubbed, or completely eliminated, and is no obstacle to high speed operating.

If the process is one of impregnation, its purpose is to cover the material evenly with the liquid, either coating the thread, as with size, or saturating each fiber, as in mercerizing. It is easy enough to insure thorough saturation of the material by merely over-doing it; but the problems will still remain, of removing the excess liquid evenly, so as to insure uniformity in the final results. In these applications, pneumatic loading opens up a whole new field of possible developments in the technique of roll processing. For, with the characteristics of his various rolls known, in accordance with their dimensions and materials, and with roll pressure controllable down to as fine precision as could be desired, the nip can be established to meet many different sets of conditions, with fewer trials and experiments.

In either class of application there is equal opportunity for closer control of final moisture content, by the appropriate determining of roll and nip. The roll having been selected for the type of finish desired, the greatest degree of extraction of which that roll is capable may be obtained by setting it at its best operating pressure. It is no longer necessary to guess at what nip a material should be run, when chart records are on file which show exactly the pressure previously used to obtain a certain desired result.



Pneumatic loading may be applied to existing squeeze roll equipment, or it may be built into new units. This two-roll padder of recent design has been equipped with pneumatic loading at the factory.

The instrumentation of a pneumatic loading system is very simple, and its maintenance easily handled by the mechanical department of any well-run mill. The control panel, measures approximately 18 by 24 inches, and on it are mounted a load recorder, an air switch, and one air pressure regulator if the installation calls for equalized pressure at both ends of the roll, or two if there is to be separate loading control at each end. The recorder is a one-pen or two-pen instrument, according to the same circumstances. (A load indicator may be substituted, if the mill so decides, but the recording instrument is strongly recommended. The indicator, in this as in any other application, will show whether the operating pressure is correct, at the moment; but a recorder shows what the pressure is and what it has been throughout the operating day, the duration of each run and the intervals between each run and the next, and provides all this valuable operating data in clear and complete chart form.)

Patents Issued on Textile Inventions

According to Eaton & Brown, patent attorneys, Charlotte, N. C., the following patents have been granted: John F. Schenck, Sr., Lawndale, N. C., relating to a cord package and method of winding same, whereby the winding of a plurality of packages is accomplished by placing a tube on a winding spindle which has a table to rotate with the spindle and winds a ball of cord on the tube. When the package is full another package may be wound, permitting many packages to be wound, yet connected together. Felix Pressley, Pelzer, S. C., and William D. Dodenhoff, Greenville, S. C., patent on picker stick check to eliminate conventional lug strap and check strap.

W. F. Penland, Lexington, N. C., patent for loom to wind broken strands of plied yarn (when all strands are not broken) to permit operation of stop motion. Rotary brush in contact with warp engages broken plies and winds strands around brush to break defective strand.

Robert O. Huffman, G. W. Shuford and B. W. Childers, Drexel, N. C., patent on special shearing and stripping apparatus for hosiery, comprising a rotary form on which the socks are placed, wrong side out, with clippers mounted in each side of the path of travel of the forms for shearing the projecting strands of yarn.

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National Cotton Policy Must Keep Domestic Consumption Up

Opposing current proposals for revision of the cotton control program which would artificially raise the price of cotton to mills and consumer, The Cotton-Textile Institute has issued a statement urging retention for at least another year of the present system of control and benefit payments.

The statement, which has been sent to members of Congress, holds that if and when additional payments are contemplated the welfare of cotton is best served by providing for them from the General Treasury rather than obtaining them through a marketing certificate plan, a processing tax, or a high loan rate.

"This is the only sound position that can be taken if we are to protect not only domestic cotton consumption but also the American consumer," the Institute declares. "To tax cotton is to tax the consumer doubly, for the additional cost of the raw product at the source would be pyramided through mark-ups at each stage along the line of distribution. Under the proposed plans for artificially increasing the price of cotton, the American consumer would be asked to pay approximately $500,000,000 a year more for cotton goods." The statement makes the following points: That,

"1. The farmer and processor stand or fall together.

"2. The competitive threat to cotton is real.

"3. An artificial price is equivalent to a retail sales tax.

"4. The present cotton surplus is not so terrifying as it is made to appear; and

"5. Reduction of consumer demand (sure to come from increased prices) will only aggravate the surplus problem and force us into more costly alternatives."

To adopt any proposal which would increase the cost of the textile industry's raw material by about 60 per cent, the statement argues, "would immediately give an extraordinary competitive advantage to substitutes for cotton and result in speedy loss of an important part of the industrial utilization of cotton products. The objective for attack is the cotton surplus itself. So long as it is encased in steel bands and jute wrappings it is of no value to anyone. The only constructive fact about this surplus is that it needs to be used. This can be accomplished. Let us stop thinking of cotton as a farm product alone, and regard it as an item of consumption."

An Answer to a Cable Asking the Question:

Are Dust Rooms Out-of-Date?

LAST MONTH, a cablegram was received by COTTON from a large textile manufacturer in a foreign country, reading as follows:

> WE ARE STUDYING PLANS NEW COTTON SPINNING MILL. ARE DUST TOWERS OUT OF DATE? PLEASE INFORM BY AIR MAIL.

The following is an extract of the answer, and is presented as being of possible interest on the subject generally:

"We have this morning your cablegram of yesterday with reference to dust towers or flues or chambers in connection with picker rooms. You asked specifically whether dust towers are out of date. We feel sure you asked your question in this form for the sake of brevity, and not primarily to secure a categorical answer, because this is just another one of those things in the March of Progress on which it would be difficult to draw a line or establish a point and say that everything back of it is 'out of date'.

"At the same time, we will say unhesitatingly that in this country the elimination of the dust house or chamber has proven to be an unqualified success. Furthermore, practically every new picker room that has been built in this country within recent years has been erected without a dust chamber. Furthermore, there are scores of instances where, in re-vamping or re-equipping existing picker rooms, the dust chamber has been entirely eliminated. Furthermore, if we were considering the construction of a new mill we would not consider the use of a dust chamber. We find this opinion unanimously concurred in by the machinery experts and mill engineers with whom we have had the opportunity to discuss this matter.

"Our reason for declining to make a direct 'yes' or 'no' answer to your question as to whether a dust tower is out of date is that there are many mills still operating successfully and efficiently with a dust house, and we felt that to say categorically that a dust house is out of date would imply criticism of them. At the same time, we have tried to give you a fair statement of the situation as we see it. We are confident that you would find almost unanimous agreement throughout the industry that it has been definitely proven that with facilities made available within recent years a dust house is unnecessary, and that those who have not eliminated the dust house as yet have not done so largely because of the economic and physical complications involved in the re-organizing of their machinery and equipment.

"The first knowledge we had of the elimination of the dust house was about 12 or 13 years ago when Mr. E. H. Rogers, agent of the Fulton Bag & Cotton Mills, Atlanta, developed a means of re-circulating the air within a picker and discharging the dust into a suspended fabric bag. We described his method on page 729 of the June 1931 issue of COTTON. * * *

"Subsequently, because of the entirely successful results secured by this installation and elsewhere, other means were developed for achieving the same general result. Two of the picking machinery manufacturers in this country have methods of doing this in the form of filtering equipment, and the other picker manufacturers, who do not themselves manufacture filtering equipment, endorse the principle of re-circulated air and filtering equipment involving the use of one of the other methods.

"The advantages of air re-circulation and filtering are, we think, self-evident: It permits accurate and precise control and regulation of the atmospheric conditions in the picker room; it reduces the cost of heating in the winter time through the elimination of the enormous drafts of air from adjoining departments; it saves power; it eliminates the necessity of cleaning the dust house periodically; and it minimizes the fire hazard in this connection since these filters really act as fire traps. The advantages of controlled atmospheric conditions in the picker room are self-evident in that this permits the production of more uniform laps, and it was this objective that Mr. Rogers had in mind in his original work in this direction.

"We hope we have covered your inquiry and appreciate very much your calling on us in this matter. Let us repeat, for emphasis, that in the case of a proposed new mill, we feel you are on entirely safe ground in considering the construction of a picker room without a dust tower or chamber and that, in fact, we would not think of doing otherwise with the facilities for filtering and recirculation now available.

"An outstanding installation is the Columbus (Ga.) plant of the Bibb Manufacturing Company, which we are describing in detail in the February issue of COTTON. This plant has just re-vamped its picker room by the installation of 27 single-process pickers, with cleaning machinery immediately back of it, and, in the opening room, 54 F-7 feeders, and the entire department is filtered and the air re-circulated, with no dust house being used."

"Southern Industry and Regional Development"

University of North Carolina Press has published *Southern Industry and Regional Development* by Harriet L. Herring, research associate, Institute for Research in Social Science, University of North Carolina, Chapel Hill, N. C. The book points out the need for manufacturing industry in the South in order to achieve a better balance between agriculture and manufacturing. Much of the information included is a statistical analysis of various types of southern industry from the standpoint of number of wage earners, value added by manufacture, salary of wage earners, etc. Price $1.00.

Dermatitis from Textile Finishes

A Commonsense View of the Present Situation

By Walter M. Scott

THE SUBJECT of dermatitis caused by wearing apparel is so old that it may well trace its origin to the first fig leaf worn by Eve, but unfortunately it is only fairly recently that systematic records have been kept of cases of this type and efforts have been made to investigate scientifically the causes for each outbreak of skin irritation. At the present time, probably one of the most outstanding authorities on this subject is Dr. Louis Schwartz, Medical Director in Charge of the Office of Dermatoses Investigation of the U. S. Public Health Service.

Dr. Schwartz has indicated in a paper published in the Journal of the American Medical Association in September 1940, and in an address presented before the Merchandising Division of the National Retail Dry Goods Association on January 14, 1941, that an unusual number of cases of dermatitis have been traced to contacts with textiles having certain new types of finishes. Many of the textiles which appeared to be the worst offenders were composed of cotton, although some were manufactured from a new synthetic fiber. Therefore, although there is still no undue cause for alarm, it would seem advisable for cotton manufacturers, particularly those who have any part in the finishing of cotton goods, to familiarize themselves with the situation which now exists and formulate policies which may prevent further trouble in the future.

Many new types of finishing compounds have been developed for cotton within the last few years, but most of them can be generally classified in one of the following groups:

1. Cellulose esters and ethers which produce fullness or stiffness as desired.

2. Synthetic resins, such as urea-formaldehyde condensates and polymers of acrylates or vinyl compounds, which produce fullness, stiffness, luster, or resistance to creasing, crushing or shrinking as desired.

3. Modified derivatives of natural rosin which produce fullness or stiffness as desired.

4. Organic salts of nitrogen bases which produce softness and in some cases resistance to water as desired.

5. Fatty alcohol sulfonates or long chain alcohol sulfates which produce softness as desired.

Only one of these groups has been definitely shown to be involved in the outbreak of dermatitis described by Dr. Schwartz. The finish in question was an emulsion of an acid ester gum, which would place it in Class 3, "Modified Derivatives of Natural Rosin". As soon as the irritant nature of this finish was demonstrated, it was withdrawn by its manufacturers for use on wearing apparel.

In general, the other classes of new finishing compounds do not seem to render clothing fabrics any more irritating to the skin of the wearer than the older types of finishes or the synthetic dyes used for coloring purposes. The older textile men will remember that in the early days of the so-called coal tar dyes, some of these, such as the fur dye, para phenylenediamine, were shown to have caused dermatitis, and so for many years the color was always blamed whenever any irritation was traced to wearing apparel, and yet dermatologists are now willing to state that synthetic dyes are comparatively harmless, because of the large number of people wearing dyed clothing with no ill effects.

And so it is with the synthetic resins, provided that they are properly applied to the cloth. For example, the urea-formaldehyde resins are generally placed on the fabric in a state of partial polymerization and if they are not completely cured in the subsequent finishing process, free formaldehyde may be retained by the cloth and cause dermatitis when it comes in contact with the skin. It is known that the resins themselves become more insoluble during the process of curing, and it has been stated as a general principle that the more insoluble the resin finish is, the less chance there will be for its causing irritation to the skin of the wearer. The methacrylate finishes which are emulsions of completely insoluble resins have so far been given practically a clean bill of health. Of course it is essential that the resin should be insoluble not only in water but in the fats and sebaceous matter which are present in the skin.

Cotton finishers must remember that although the resin itself may be harmless, it is often modified by plasticizers or other agents to give it the desired properties for use in wearing apparel. Not all of these plasticizers have been tested, but certain ones have been shown to be primary skin irritants as well as sensitizers. The latter term is used to denote agents which do not cause immediate skin irritation but do cause the subject to become sensitized so that subsequent exposure will quickly cause dermatitis.

It is obvious that toxicologic and dermatologic tests should be performed on all finishing compounds which are intended for use on wearing apparel. Unfortunately, there are very few men in this country who are qualified to make such tests and the expense of performing the tests is considerable. It is advisable first to experiment on susceptible animals such as rabbits to determine whether the compound is a primary skin irritant. Then patches of the fabric treated with this compound are applied to the skin of at least 200 individuals for a period of five days, and a rec-

ord of any harmful effects observed. After an interval of ten days, a second series of patches should be applied to the same individuals and allowed to remain for two days, again recording any harmful action.

Dr. Schwartz has stated that "there will always be some people who are allergic to almost any substance, and it is impossible to manufacture materials to which someone will not be allergic." There are many recorded instances of sensitiveness to the natural protein fibers (silk and wool) and some people have even been allergic to pure cotton, particularly in the linter form. Therefore, the interpretation of any dermatologic tests requires an expert opinion based upon long experience.

With this in mind, the textile associations, such as The American Association of Textile Chemists and Colorists and Committee D-13 of the American Society for Testing Materials, are endeavoring to co-operate with producer associations, such as the Synthetic Organic Chemical Manufacturers Association, in the formation of a joint committee to sponsor suitable dermatologic tests upon finishing compounds at a recognized institute or school of public health. It is anticipated that such tests will demonstrate that practically all of the new textile finishes are as harmless to the wearers of the textiles as the synthetic dyes have proven to be. At any rate, the cotton finisher is entitled to receive information from the manufacturer of any new finishing compound as to the dermatologic characteristics of this compound, and the effects when used on fabrics.

Consumption of Cotton According to Product Use Reported for First Time

AN INTERESTING analysis of cotton consumption according to the products into which it goes has been made by the Bureau of the Census, and the report is shown in the appended table. This report covers the cotton consumed by domestic mills from July 1 to December 31, 1940, and is the first time that such figures have been presented, showing the consumption by classes of products manufactured, though the Bureau has been publishing monthly figures on raw cotton consumed, by states, since 1912. The new report discloses, for the first time, the types of manufactured goods that consume the larger amounts of cotton. It is understood that the Bureau hopes to present a similar report monthly at some time in the future.

Study of the report shows that of the cotton consumed in the period covered, over 20 per cent went into sales yarn, 13.5 per cent into narrow sheetings and allied fabrics; and that print cloth yarn fabrics accounted for another 10 per cent. Also, of each class of product, it shows the proportion manufactured in the South and in the North. For instance, computation reveals that 91.9 per cent of the sales yarn, 98.2 per cent of the print cloths, and 92.2 per cent of the colored yarn fabrics were produced in the South; and 67 per cent of the fine goods were produced in New England, etc.

The new compilation has a number of interesting and valuable uses. The detailed report is reproduced below.

Winget Heads Gaston County Discussion Group

H. Gilmer Winget, superintendent of the Victory and Winget plants of Textiles, Inc., Gastonia, N. C., was elected chairman of the Gaston County Division of the Southern Textile Association at its meeting on Friday evening, March 21. S. M. Cauble is vice chairman, and they and three others—George R. Grice, of Ranlo, E. M. Quinn of Cherryville, and Wade Stowe, of Belmont—constitute the executive committee.

R. D. Hall, prominent mill executive of Belmont, spoke to the meeting, which was well attended, on the subject of national defense. His talk was followed by a general discussion of the textile industry's part in the program.

Brice Dickson, secretary of the Gastonia Chamber of Commerce, described plans for the proposed textile vocational training school for North Carolina.

Class of Product	Cotton Consumed July 1-Dec. 31, 1940 (Running Bales)				
	United States		Cotton Growing States (bales)	New England States (bales)	Other States (bales)
	Bales	Per cent of total			
Total	4,207,457	100.0	3,605,619	486,509	115,329
Sales yarn	856,004	20.5	786,354	50,340	19,310
Duck	232,156	5.5	219,910	4,378	7,868
Tire fabrics and cords	313,615	7.4	273,512	35,163	4,940
Narrow sheetings and allied fabrics	568,629	13.5	538,479	21,078	9,072
Wide fabrics	355,881	8.4	265,415	73,760	16,706
Print cloth yarn fabrics	449,117	10.7	441,583	5,274	2,260
Fine goods	236,617	5.6	78,383	158,234	-----
Napped fabrics	189,250	4.5	150,970	37,259	1,021
Colored yarn fabrics	294,922	7.0	271,145	22,589	1,188
Towels	92,364	2.2	88,134	2,196	2,034
Other woven fabrics and specialties	169,981	4.0	143,103	20,219	6,659
All other cotton products (not included above)	*448,921	10.7	348,631	56,019	44,271

*Included in "All other products" are 174,000 bales of cotton distributed by the Surplus Marketing Administration under various mattress projects.

Views in a New Mill in Brazil

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At right, an exterior view of the plant of Johnson & Johnson do Brazil, in Sao Paulo, Brazil, interior views of which are shown in the photographs below. . .

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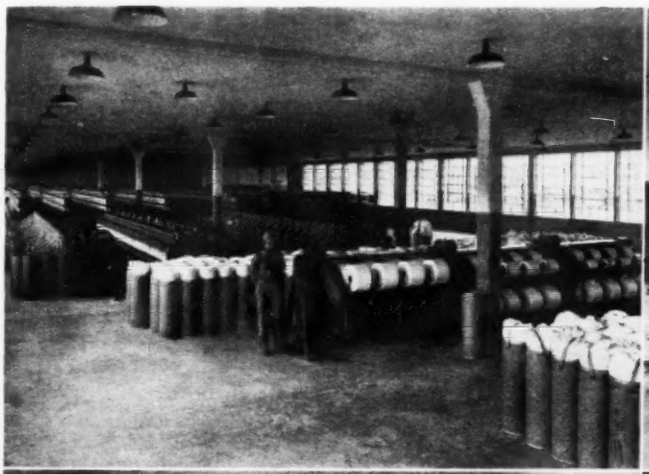
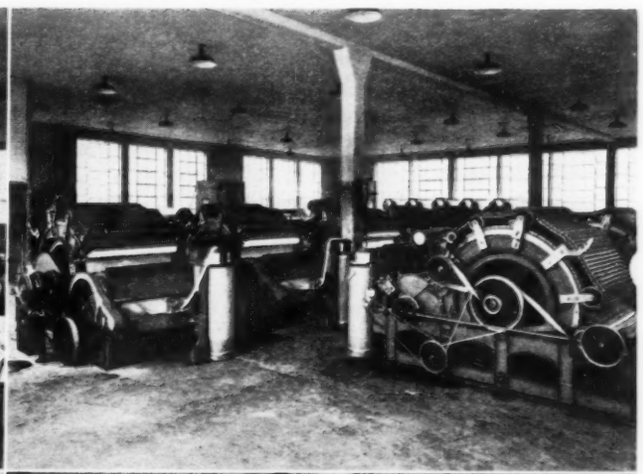
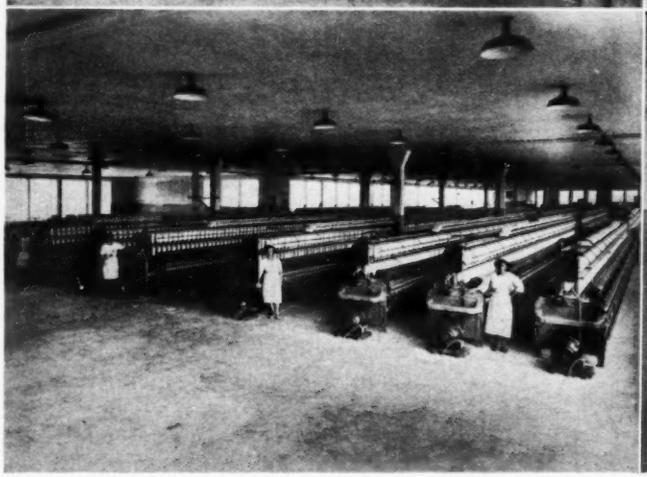






THE photographs on this page are of the new plant of Johnson & Johnson do Brazil, located at Sao Paulo, Brazil. They were furnished to COTTON by Harry H. Purvis, superintendent of Chicopee Mfg. Corp., Gainesville, Ga., who has just returned to this country after spending the past year supervising installation of this new equipment.

The mill makes gauze. The mill building consists of three stories. Opening and picking departments are not shown. Opening equipment is on first floor and consists of new blending hoppers and feeders, feeding onto feed table and into vertical opener, then to No. 11 high-speed condenser, and to No. 12 lattice opener. Stock is blown to picker on third floor, picker being new single-process equipped with No. 11 condenser feeding hopper and blending reserve.

Cards on third floor of new plant may be seen in photo at upper left. They are driven by individual motor with silent chain drive. Humidifiers are fan type, but are not shown in picture. Photo at upper right shows controlled draft drawing, 9x4½ long draft single-process roving frames. Long draft spinning in background.

Lower left, long draft spinning, equipped with individual v-belt drive. Lower right, the new Model X looms.

Yarn manufacturing equipment furnished by Saco-Lowell Shops, and looms by Draper Corporation.

A Study of

Roving-Yarn Diameters

By John Duerst

EVERY expert or student of roving frames knows what an important part the "laps per inch" constitute in the build of a good bobbin. Several formulas, some of them fairly reliable (if the right one is chosen). will serve this end more or less. Most of these calculations are based on the square root of the counts. They work accurately within small ranges of counts, but if applied to two counts of wide range, the results will not come out to practical satisfaction.

This fact has been recognized and therefore several coefficients are advised within a commonly wide range. For instance, in a machinery catalog the following figures are given for a range from hank count 1.00 and below to 4.00 and above.

1.00 hank and below
$7.5 \times \sqrt{\text{Hank Cts}}$ = Laps per inch

1.00 hank to 2.0 hank
$8.5 \times \sqrt{\text{Hank Cts}}$ = Laps per inch

2.00 hank to 3.0 hank
$9.5 \times \sqrt{\text{Hank Cts}}$ = Laps per inch

3.00 hank to 4.0 hank
$10.0 \times \sqrt{\text{Hank Cts}}$ = Laps per inch

4.00 hank and above
$10.5 \times \sqrt{\text{Hank Cts}}$ = Laps per inch

While these figures will give good results, there is every reason to assume that there must be some single formula that will take care of the whole range of hanks without having to be split into groups or take a rough average of multiples to suit them all.

Roving Lap-per-Inch Formula

The principle of the Duerst roving formula as explained in January 1939 issue of COTTON seems to be a solution, when adopted in this connection. Since the results of its practical application have been quite satisfactory along a range from .65 to 10 hank, the writer thinks that this new adaptation might safely be published and recommended.

According to this adapted formula, we have:

$$\text{Laps per inch on roving bobbin} = 4\ (\sqrt{1 + 8 \times \text{hank cts}} - 1)$$

This includes the "spaces" between each lap.

Now, while this formula is giving good results for medium and soft twisted rovings, it might be necessary to choose a smaller or higher multiple than 4.00, depending on what material or the hardness of twist that might be used. In other words, while for one mill a 4 multiple is the correct one, another mill would have similar good results by using a 4.25 multiple, or for that matter a lower multiple.

For example, to calculate the number of laps per inch of 6.0 hank, according to the foregoing formula we proceed as follows:

$$\text{Laps per inch of 6 hank} = 4 \times \left(\sqrt{1 + 8 \times 6.0} - 1\right)$$

$8 \times 6 = 48$
$48 + 1 = 49$
$\sqrt{49} = 7$
$7 - 1 = 6$
$4 \times 6 = 24$ laps per inch

Yarn Diameters

While it is not necessary to know the roving diameters when developing a lap per inch formula, we do need an accurate way to determine yarn diameters in connection with many textile calculations. There are, of course, several ways to measure yarn diameters more or less accurately, or inaccurately for that matter. Without enumerating such methods the writer's purpose is to present his own method which he thinks compares well with present and past results.

The principle of the yarn diameter formula is the same as used for the laps per inch roving. Considering M being the Multiple and Cts. the yarn count, we have:

$$\text{Laps per inch} = M \times (\sqrt{1 + 8 \times \text{Cts}} - 1)$$

$$\text{The diameter of one lap} = \frac{1}{\text{laps per inch}}$$

follows:

$$\frac{1}{\text{Laps per inch}} = \frac{1}{M \times (\sqrt{1 + 8 \times \text{Cts}} - 1)}$$

And, through actual counting of tightly wound 27s yarn on a black spool, 143.34 laps per inch were found. This information used, we have:

$$\frac{1}{143.34} = \frac{1}{M \times (\sqrt{1 + 8 \times 27} - 1)}$$

$$M = \frac{143.34}{\sqrt{1 + 8 \times 27} - 1}$$

$$M = 10.44$$

Or, the yarn diameter formula for all other counts, giving results in fractional inches:

$$\text{Diameter of any spun yarn of average construction in fraction inches} = \frac{1}{10.44\ (\sqrt{1 + 8\ \text{Cts}} - 1)} = \frac{1}{\text{Laps per inch}}$$

The following tabulated yarn diameters are calculated with the Duerst formula, based on 27s at 143.34 laps per inch.

Yarn No.	Yarn Dia.	Yarn No.	Yarn Dia.
10s	1/83	50s	1/198
12s	1/92	60s	1/218
16s	1/100	70s	1/237
20s	1/122	80s	1/254
24s	1/134	90s	1/270
30s	1/151	100s	1/285
40s	1/177	110s	1/299

Now, while this table gives the maximum number of laps per inch on yarn diameter basis, many cloth constructions are permitting a certain space between each lap, or as a matter of fact, on the other hand more ends are crowded per inch than the yarn diameter would indicate.

In this case, special multiples may be established, either through re-calculation from present laps per inch or by experimentations.

We will then have the following three main groups:

1) Yarn laps per inch at actual yarn diameters $= \left(\sqrt{1 + 8 \times \text{Cts}} - 1\right) \times$ Multiple 10.44

2) Yarn laps per inch permitting spaces $= \left(\sqrt{1 + 8 \times \text{Cts}} - 1\right) \times$ less than 10.44

3) Yarn laps per inch crowded $= \left(\sqrt{1 + 8 \times \text{Cts}} - 1\right) \times$ higher than 10.44

Other discussions by Mr. Duerst, "The Duerst Formula" Jan. '39 page 56; "The Duerst Method of Figuring Progressive Yarn Twist" Dec. '39 page 64; "Theory of Yarn Skein Strength" Nov. '40 page 53. John Duerst is research engineer for The Clark Thread Co. of Georgia, Clarkdale Ga.

Combination Yarn Defects

By C. W. Bendigo

COMBINATION YARNS, as discussed here, are the union of dissimilar threads, the most common in throwing being one strand of normal or low-twisted acetate rayon combined with an end of hard-twisted viscose crepe rayon. Other combinations are made from one end of spun rayon and one end of viscose crepe, or from spun rayon and acetate, cotton and rayon, wool and silk, and even by plying two ends of combination threads. We describe them in this way to distinguish them from ply yarns—which are composed of two or more similar threads placed parallel and twisted together; and from novelty yarns, which may be either similar or dissimilar threads, but are characterized by nubs, loops, spirals and other contours.

In this discussion, unless the construction is specifically mentioned otherwise, we refer to one end of acetate containing around three turns combined with one end of viscose crepe with 45 or more turns per inch, all twists being in the same direction.

The preponderance of combination yarn defects are those of damaged yarn, principally broken filaments, and those of bad plying, such as loops and kinks, all of which often result in skin-backs. Other defects are slubs or twisted-in waste, wrong twist, stretched yarn, mixed yarn, and even knots and dirt. In addition, combination yarns are subject to all the imperfections found in each of the single threads.

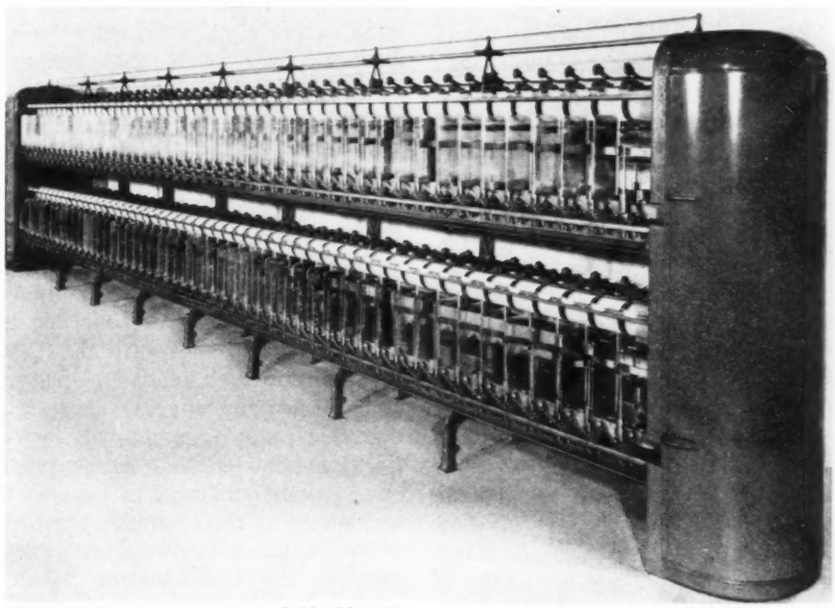
I prefer to think of combination throwing as being as distinct from crepe throwing as crepe is from silk. For greatest clarity throwing should be thought of as being divided into four distinct parts: silk, crepe, combination and novelty, and I think combination yarns are closer to novelty yarns than crepes, so far as throwing is concerned.

Bad plying causes more defects in running combination yarns than anything else. Next on the list is broken filaments. Weavers see most bad plying as strip-backs, or skin-backs; some as loops, kinks and spirals. Loops generally refer to excessive acetate in relation to crepe; kinks and spirals usually mean too much crepe in relation to the acetate.

The primary problem is that when combining and twisting, the crepe end contracts differently from the acetate. Loops, kinks and spirals are caused either by failing to correct the feeding of the two ends, or by "over-correcting". This problem of correcting the feeding is most difficult since practically all rayon combinations are run on doubler-twisters with single speed feed rolls. The problem is further complicated by the general practice of running the combination yarns in two operations. In the second operation — up-twisting — no control whatever can be had of the single end, since the yarn is already plied, yet the uneven contraction between the two ends continues with each turn inserted.

For illustration, let us consider the popular 150/150 yarn: 150 denier 3 turns acetate plied about 7 turns with 150 denier 48 turns crepe, all twists being "S". Here we know the crepe is nearer 178 denier, but the 150 denier 3 turns acetate is very close to 150. Thus we have two unlike yarns to put together with about 7 turns. As these turns are inserted in the ply, 7 turns also go into each of the individual threads. In this connection, I am glad that, contrary to general belief some years ago, most people now agree that turns in the ply *do* affect the turns in the individual strands.

The 7 turns added to the 48 turns in the crepe causes considerable contraction, the full amount depending on the tension; but 7 turns added to the 3 in the acetate causes relatively little contraction, and when both ends are fed equally, loops form. To overcome them, more tension is applied to the acetate than to the crepe on the doubler-twister, and the acetate either stretches (not elongates) slightly or else tension is applied to the extent that the acetate slips very slightly on the feed roll. With too much



Photographs, Courtesy Atwood Machine Co.

A view from the gear end of the Model 110 twister, which is generally employed in handling combination yarns as discussed in this article

Abstract of a paper presented by the author at the March 5, 1941, meeting of the American Association of Textile Technologists.

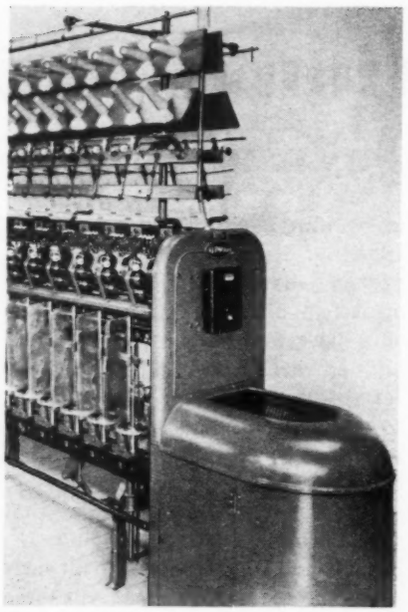
stretch, the result is elongation or breakage; with too much slip, the crepe kinks on or spirals around the acetate causing acetate strip-backs, since all the strain put on the yarn must be borne by the single acetate strand.

No one can accurately say, arbitrarily, what the relationship between acetate and crepe threads in a combination should be, because of such qualifying factors as denier, filament, turns, soaking formula, etc. I feel the relationship should be such that in the final thread each end will bear as much as possible of its share of the strain. One difficult angle is that one cannot tell whether the ply is correct except by testing the completed yarn, after it has been through two twisting processes and two steaming periods. While standards can be set for each process after the correct ultimate ply is determined, the yarn must be constantly checked, and any new lot double-checked.

Tensioning is important to prevent acetate loops and even crepe kinks. With too little tension, the crepe component contracts even to the extent of forming snarls; meanwhile the acetate puckers up. Sometimes these defects straighten out when tension is applied in later operations, but this too often is accompanied by a damaging of the crepe at the places where it kinked —and then the yarn is blamed for having weak places that cause strip-backs!

Trouble in combination yarns that are over-stretched due to excessive tension is easily understood. Unless the stretching is detected when checking tensions or observing broken filaments, the throwster generally will not know about it until complaints come in of streaky warps and filling bands; even then it is not always clear that excessive tension in throwing caused them.

Defects from stretching are perhaps the most insidious of all. It might seem that stretch should be easily controlled, until it is recalled that practically all rayon combination yarns are run in two operations; that is, doubling the yarn on a ring twister while inserting a low number of turns, usually about 3, at about 6,000 r.p.m., and then bringing the yarn up to full turns on a silk type up-twister. In the



Drive end of a 5B doubler-twister. The creel shown was especially designed for combination yarn . . . . . .

first operation, the tension normally becomes less as the take-up bobbin becomes full, so that the yarn run with the lightest tension is on the outside of the doubler-twister bobbin. When this bobbin is placed on the up-twister for the second operation, it starts off with a light tension which normally builds up as the yarn runs off. Thus the yarn which received the most tensioning in the first operation is subjected to maximum tension in the second, and vice versa. This causes acetate loops at the start of the second twisting or crepe kinks in the first operation yarn. Long or bunched loops often observed in combination cloth frequently come from the flyer wires in the second twisting operation sliding back the acetate loops. This also causes strip-backs as the tip of the flyer wire frequently damages or breaks the acetate loops after which they run through.

This tensioning problem has caused practically every combination throwster to give the yarn a slight steaming between the two operations, which tends to set the crepe twist and slightly elongates the yarn and loops do not form. But I cannot endorse the practice of additional steaming of yarn that has begun to kink, nor the practice of backwinding combination yarns between the two twisting operations.

Why are combination yarns thrown in two operations, then? The answer is the need for production. In a low turn 150/150 combination it is cheaper to throw in one operation; but when the ply twist exceeds about 10 turns per inch, the two-process operation is cheaper.

Doubler-twisters are the bottleneck in most combination throwing plants despite all of the old silk double-twisters available; these are ill-suited to the relatively heavy rayon combinations, because of package size, necessity of accurate twists, and excessive knotting.

Strip-backs result from waste, slubs, or even knots in the single ends. In 150/150 combinations, stripping of the crepe while the acetate holds indicates damaged or weak crepe, but sometimes it is just bad plying. Stripping of the acetate normally is more common, in this combination, since the crepe has a greater elongation. This is also true of 100/100 and 75/75 combinations; on these yarns, the throwster is faced with the dilemma of loopy yarn that will break perfectly or smooth yarn with a slight tendency toward acetate strip-backs.

So far we have referred exclusively to acetate, crepe and ply twists all being in the same direction for each combination. When one of the twist directions is changed, the problem of defects becomes more difficult and in many cases almost impossible to solve on some of the equipment being used. With the exception of using opposite twist acetate in the combination, most changes in twist direction are made to produce effects that might otherwise be called defects. Personally, I call such yarns novelties, not combinations.

Thus, by using acetate with an opposite twist from the crepe and ply, loops are sure to appear unless correction is made in feeding the yarn, usually by tension adjustment. The acetate tends to form more of a sheath around the crepe, and while this is sometimes desirable for a particular effect, the broken filaments which generally accompany it rarely are.

Other broken filaments are generally caused by the yarn striking something it should not, or being run through or over a damaging surface.

Wrong or worn travelers account

for many cases of broken filaments. This trouble re-occurs since the fit of the traveler needs changing as the ring wears. The selection of the proper traveler for combination yarns is a study in itself.

Mention should be made of 4-ply yarns, and this leads up to one of my main points. The usual 4-ply combination is made by joining two 100/75 yarns; that is, 100 denier acetate and 75 denier crepe. One 100/75 thread is 10 turns "S" twist and the other is 10 turns "Z". The ply usually is 5 turns "S". This means that the "Z" twist thread is going to have 5 turns backed out of it in the final plying operation. It will elongate greatly while the "S" twist 100/75 will contract. Obviously, loops and strip-backs are the principal trouble.

There is such a serious problem in holding back the feeding of the "Z" twist end in this yarn that, to my knowledge, the yarn has been run only passably well, although the problem is clear: there is no machine built fully adapted to running this combination.

A machine is needed with a double line of feed rolls plus a stop motion. In fact, would not such a machine be ideal for all of the combinations we have discussed? If combinations continue in favor, the use of such a machine should become so general that no low twist combination yarns need be run in two operations; and so that a greater number of turns could be put in the first of two-process yarns than is now generally possible, to control the ultimate thread better.

If combination yarns show definite evidence of continuing, with profits in them, and if the pressure for more nearly perfect combinations continues, there is no question but that machines specifically developed for producing them will be developed. I know of two experimental machines being developed for combination yarns, but there has been no particular call for them, and, temporarily, work on them has been suspended during the defense emergency.

One big obstacle in rayon throwing is a reluctance of the throwsters to demand and help develop throwing machinery particularly suited to rayon yarns. There have been shining examples to the contrary and their luster appears brighter by contrast to the many places where rayon has been fitted to equipment designed for some other textile. When the present abnormal general condition is over, it will be the plants best equipped to handle rayon that will continue to do so, and it is none too early now to prepare for that time.

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New Industry Committee Named to Study Revision of Minimum Wage for Textiles

A new textile industry committee has been appointed by General Philip B. Fleming, administrator of the Wage and Hour Division of the U. S. Department of Labor, to investigate the economy of the textile industry (cotton, rayon, silk and certain textiles other than wool) and to recommend a minimum wage rate or rates. The fair labor standards act directs the committee to "recommend to the administrator the highest minimum wage rates which it determines, having due regard to economic and competitive conditions, will not substantially curtail employment in the industry." Lessing Rosenwald of Jenkintown, Pa., former chairman of the board of Sears Roebuck and Company, is chairman of the committee, which was scheduled in Washington, D. C., April 14.

Employer members of the committee are: Donald Comer, Avondale Mills, Sylacauga, Ala.; Charles A. Cannon, Cannon Mills, Kannapolis, N. C.; W. Harrison Hightower, Thomaston Cotton Mills, Thomaston, Ga.; Sam H. Swint, Graniteville Company, Graniteville, S. C.; R. C. Dick, Naumkeag Steam Cotton Company, Salem, Mass.; Allan Barrows, Gosnold Mills Corporation, New Bedford, Mass.; and Henry E. Stehli, Stehli and Company, Inc., 1372 Broadway, New York City.

Members for the public are: Barry Bingham, Louisville Courier Journal, Louisville, Ky.; Arthur Raper, Bureau of Agricultural Economics, U. S. Department of Agriculture, Greensboro, Ga.; Harry D. Wolfe, University of North Carolina, Chapel Hill, N. C.; Col. Ike Ashburn, Texas Agricultural and Mechanical College, College Station, Texas; Amy Hewes, Mt. Holyoke College, Mt. Holyoke, Mass.; and Malcolm Keir, Dartmouth College, Hanover, N. H.

Members for the employees are: Emil Rieve, Textile Workers Union of America, New York City; Edward Doolan, T. W. U. of A., Fall River, Mass., Elizabeth Nord, T. W. U. of A., Manchester, Conn.; Roy Lawrence, T. W. U. of A., Charlotte, N. C.; Horace White, T. W. U. of A., Greensboro, Ga.; Frank P. Fenton, A. F. of L., Washington, D. C.; Robert J. Watt, A. F. of L., Washington, D. C.

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1940 Rayon Consumption for Broad Goods

256 million pounds of rayon filament yarn (18 per cent more than in 1939) were consumed during 1940 in the weaving of broad goods by a large group of substantial mills which recently reported data to the National Federation of Textiles, Inc., or to the National Rayon Weavers Association. This was 87 per cent of the total shipments by yarn producers, in 1940, for broad woven goods purposes. The remainder of 13 per cent is accounted for by a large number of relatively small mills from which reports were not received and by the fact, of course, that not all of the yarn shipped in 1940 was actually consumed within that year.

Staple fiber consumption reported by the same mills was 32 million pounds in 1940, 6 million pounds less than in 1939. The 1940 figure is about 32 per cent of the total quantity (99 million pounds) of staple fiber made available in 1940 through domestic production and imports combined.

In 1940, viscose and cuprammonium accounted for 58 per cent of the total consumed; acetate, 42 per cent. In 1939, the respective proportions were 64 per cent and 36 per cent.

Northern mills used 55 per cent of the total consumption of filament yarn reported in both 1940 and 1939; Southern mills 45 per cent. As to staple fiber, northern mills reported 26 per cent of the total consumption in 1940 and 29 per cent in 1939; southern mills 74 per cent and 71 per cent for 1940 and 1939 respectively.

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Phi Psi Annual Convention in Providence, May 16-17

The 38th annual convention and get-together of Phi Psi, national textile fraternity, will be held in Providence, R. I., May 16-17, 1941, at the Providence-Biltmore Hotel. An exhibition of textiles and allied products will again be featured. The annual convention provides the opportunity for undergraduate and graduate members of the fraternity to meet and discuss the affairs concerning the society.

Exports of Cotton-Textiles from United States Shown in Report on 1940 Activities

INTERESTING INFORMATION concerning cotton-textile exports in 1940 has been made available by the Textile Export Association of the United States. The aggregate value of this country's exports of cotton manufacturers of all types last year was the highest for any year since 1930, and exceeded the 1939 total by 11 per cent. As against 1939 cotton piece goods were slightly off in yardage, somewhat up in value. Yarn exports almost doubled the 1939 figure.

The total value of exports of cotton manufacturers in 1940 is given at $75,906,335. The classification "Cotton Manufacturers" embraces cloth, duck and tire fabrics; semi-manufactured products such as pulp, waste, rags, batting, etc., and carded and combed yarns; twisted specialties thread, twine, cordage and rope); miscellaneous fabrics, including knit fabrics, damask, etc.; wearing apparel, such as underwear; house furnishings such as blankets, towels, sheets, etc.; and other manufactured products. These are combined to reach the 1940 total, in value, of $75,906,335, which compares with $68,318,386 in 1939; $56,986,404 in 1938; $59,661,823 in 1937; and $43,678,063 in 1936.

In relation to these grand totals, the following five-year figures of value of certain major items are of interest:

CLOTH DUCK AND TIRE FABRICS

	Unbleached	Bleached and Colored
1936	$5,497,260	$16,376,634
1937	6,685,122	21,594,244
1938	2,561,935	27,998,339
1939	7,953,956	28,595,204
1940	11,012,349	26,896,672

SEMI-MANUFACTURED PRODUCTS

	Pulp, Waste Rags, Etc.	Carded and Combed Yarn
1936	$8,492,496	$2,181,593
1937	12,848,156	3,168,272
1938	8,587,468	3,087,626
1939	8,432,656	3,593,026
1940	9,045,982	6,570,489

Figures over the five-year period, in pounds exported, of grey combed yarns and grey carded yarns, are especially interesting:

	Combed Yarn (Grey)	Carded Yarn (Grey)
1936	690,305	3,425,224
1937	1,023,648	5,268,911
1938	1,440,944	6,990,023
1939	1,445,257	3,825,580
1940	5,444,707	6,712,908

Total figures over the five-year period, in square yards, of all cotton cloth, duck and tire fabrics, divided into Unbleached and Bleached and Colored, follow:

	Unbleached	Bleached and Colored
1936	58,962,000	141,539,000
1937	59,452,000	176,799,000
1938	87,697,000	231,944,000
1939	95,399,000	272,067,000
1940	122,711,000	235,216,000

These figures covering all woven cloth exports add up to the following yearly totals, in square yards: 1936, 200,501,000; 1937, 236,251,000; 1938, 319,641,000; 1939, 367,466,000; and 1940, 357,927,000.

The foregoing figures have been extracted from the detailed report to constitute the framework of the following general comments.

It is roughly estimated that approximately 500,000 bales of cotton were required to produce the cotton manufactures exported in 1940. This would indicate that our exports of all kinds of cotton products last year were equivalent to about 6 per cent of our domestic consumption of raw cotton.

The most striking item in connection with yarn exports was in the classification, Grey Combed Yarn, which, as noted, jumped from 1,445,257 pounds in 1939 to 5,444,707 in 1940. Almost 60 per cent of this, or 3,079,049 pounds, was shipped to the United Kingdom. This is a direct indication of England's war needs, because, though she is the largest producer of combed yarn in the world, England had to call on the United States last year when she needed 3,000,000 pounds of combed yarn in a hurry. Other important yarn customers were Canada, Cuba, Argentina, Chile and the Union of South Africa. Some of these countries having previously looked to Britain for their supplies now turn to the United States as a more dependable source.

Our exports of tire cord on cones or warps increased from 461,948 pounds in 1939 to 2,288,707 pounds in 1940. This was accompanied by increased tire fabric shipments: 1940, 12,107,000 square yards compared to 7,172,000 square yards in 1939, and 4,100,000 square yards in 1938. In recent years some of the large tire companies have established factories abroad, and perhaps this export trade is in a sense somewhat after the methods followed by the automobile companies, i.e., to produce parts in this country and put the finished product together in foreign assembly plants. Savings in labor cost and import duties are thus accomplished. Of the 12,107,000 square yards of woven tire fabric exported in 1940, 1,800,000 square yards went to Canada, and 1,612,000 square yards to the Union of South Africa.

The Union of South Africa was also our best customer for ounce duck and numbered duck, taking a total of 3,963,000 square yards of these constructions, which is about 32 per cent of our total 1940 exports of them: 12,253,000 square yards.

In the case of bleached and colored fabrics, there was a decline in our exports last year compared with 1939, but the volume was 34 per cent above the 1937 total. Chiefly responsible for the decline last year were percales and colored yarn fabrics. Percale exports to our three principal markets—the Philippines, Cuba and Colombia—were sharply reduced. The Philippines, Haiti and Cuba are our largest outlets for denims, chambrays and other colored yarn fabrics, and the export of these goods suffered last year as the result of reduced shipments to all three.

Looking at the countries to the South of us, we find the following records, the figures being our exports of piece goods expressed in square yards:

	Central America, Mexico, and the West Indies	South America
1936	10,202,700	3,414,800
1937	10,586,500	2,930,500
1938	12,121,500	3,059,600
1939	15,114,200	4,130,700
1940	11,084,100	3,540,300

As the years go by we find that various foreign markets for cotton textiles have been expanded and some have contracted. Competition from Great Britain and Japan as well as development of home industries have all played their part in the long term trend of our export trade. But events of the past year and a half, which were beyond our control, have done more to alter the basic pattern of our trade in piece goods than all the efforts put forth by exporters over a long period of years. Markets customarily supplied by England, France and other European countries were opened to us —temporarily perhaps, but nevertheless profitable.

On the other hand, the difficulty of getting exchange experienced by some of our customers undoubtedly restricted the quantity of our exports to these markets. Such countries have been accustomed to ship raw materials to Europe and in turn Europe shipped products to this country which created a method of payment for our exports to South America. An important part of this three-way trade has been suspended, and may remain so unless the United States can find uses for South American raw materials.

Carding-Spinning Discussion by Georgia Operating Executives

NEARLY 300 mill men from Georgia and Alabama attended the regular spring meeting of the Textile Operating Executives of Georgia, held at the Armory-Auditorium at the Georgia School of Technology, Saturday morning, March 15. Topics for the day were carding and spinning. George E. Glenn, Jr., superintendent of the Lindale (Ga.) Division of Pepperell Manufacturing Company, and general chairman of the organization, presided, with Julian M. Longley, agent of American Thread Company, Dalton, leading the discussion on carding, and J. Hal Daughdrill, general superintendent of Callaway Mills, with headquarters in LaGrange, leading the spinning discussion.

In a brief business session Seth A. T. Newsom, superintendent of the Unity Spinning and Oakleaf plants of Callaway Mills, was elected to the executive committee for 2½ years, succeeding Mr. Daughdrill, whose term expired.

A feature of the meeting was a discussion of South America by Hugh M. Comer, vice-president and manager of Avondale Mills of Alabama, Sylacauga, who has recently returned from a visit of South American textile mills. Mr. Comer's address was not strictly textile in nature, but was most interesting to all present. His wit, humor and pleasing presentation kept the audience in laughter.

Picker Automatic Lap Release

Getting into the technical discussion, Mr. Longley introduced the first question which was, *What is your experience with an automatic lap release for pickers? What is your experience with a mechanism for stopping the calender rolls when the picker knocks-off?* [This question concerns devices for releasing the loggerhead pressure on picker laps after the full lap is formed, and methods for stopping the calender rolls so that the lap will not continue to roll on the picker until the attendant can doff.]

Johnston McCorkle, Hartwell (Ga.) Mills, explained that his plant has one of the automatic doffers on the pickers (operating through a cam and clutch) whereby the lap is doffed and the pin is dropped back in place. By this system the front calender rolls and screens never stop, but between the calender rolls and the vertical rolls the stock stops momentarily until the automatic doffer has functioned. When the device was first installed it required a little time to get it adjusted. It is now giving satisfactory service and Mr. McCorkle said, "We like it".

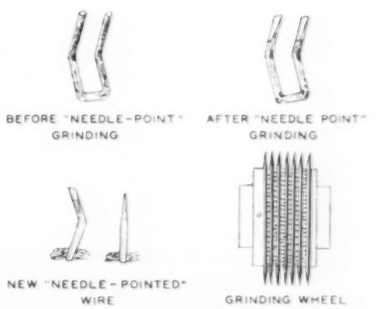
"We have the loggerhead release," said E. H. Rogers of Fulton Bag & Cotton Mills, Atlanta. "We do not have the calender roll stop," and he went on to say that the loggerhead release was giving satisfactory service. W. M. Yow of Martha Mills, Thomaston, Ga., has the same type of equipment for releasing the loggerhead as Mr. Rogers, and it is quite satisfactory. This mill at one time had the knock-off mechanism to stop the calender roll, and thought the principle was good, but the chain and sprocket broke so much that the device was removed until it could be made workable.

GEORGE E. GLENN, Jr., who is general chairman of the Textile Operating Executives

Other opinions on the device are given; *Mill No. 1:* Since installing automatic lap releases on our pickers our experience has been that the laps are not rolled on the ends, and the end of the lap is easier to find, thereby cutting down on the waste at the cards. There is no strain on the lap roll after the machine knocks-off to doff. This is fine when the machine is stopped-off overnight. *Mill No. 2:* We have equipped one picker with the automatic lap release and with the mechanism for stopping the calender rolls when the picker knocks-off. So far all of our lap charts indicate that either device will help prevent the last two or three yards of the lap from weighing light outside our tolerance of 3/5 ounces (either way). There is no appreciable difference in the results of either type device.

Plough Grinding

The second carding question asked for opinions on the use of plough grinding equipment. [Often referred to as needle-point grinding or side grinding. Grinding wheels for this purpose are thin and made of consolidated emery, beveled to a fine edge at the outer periphery.] W. R. Beldon, Clark Thread Company of Georgia, Clarkdale, said, "We find plough grinding very favorable. It does a good job of rejuvenating the point on the wires." He went on to explain that in his opinion the grooved emery does not give side grinding to the wire, basing his opinion on a microscopic study of wire that has been "side-ground" with grooved emery, saying that the wire looked "mushroomed". When asked if he discarded his other [regular emery grinding] equipment when he started plough grinding, Mr. Beldon was careful to explain that plough grinding *does not* take the place of regular grinding equipment, but is simply a means of putting the original point on the wire as it comes to the plant from the manufacturer, and that a card is plough-ground only once in every 25,000 running hours.



A sketch from a Dronsfield Bros. booklet illustrating the principle of plough- or side-grinding

Report and photos by John C. Fonville of "Cotton".

amounting to about once every 10 years, and usually only getting a card plough-ground once (or at the most twice) in the life-time of a set of fillet. For his regular grinding period he uses standard grinding equipment for 35 minutes every 360 hours. A representative of Muscogee Mfg. Co. said that his mill has not used the plough grinder, but uses No. 7 emery three rounds and No. 40 emery for seven rounds.

Notes submitted by another mill were to the effect that emery fillet *does* side grind the wire, and this mill uses the No. 7 emery because it has a higher or longer grit and gives more side grinding to the wire than any other number of emery the mill has tried. Two other mills have noticed no side-grinding effect from emery.

Increasing Sliver in Can

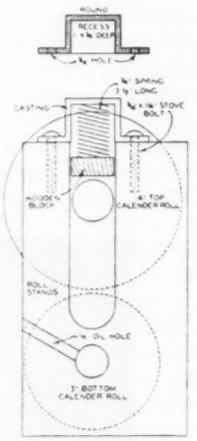
The next question asked for experiences with methods of increasing the amount of sliver in card and/or drawing cans by (a) inserting tube of smaller diameter in coiler tube, (b) compression springs on calender rolls, (c) reversing direction of can. Hal Daughdrill said that one of the Callaway plants uses the compression springs on the calender rolls to increase weight in the can, and added that they have noticed no difference in the uniformity of the sliver. R. W. Lawson of Chicopee (Ga.) Mfg. Corp., also reported favorably (referring to the system of using a smaller trumpet and a re-designed tube gear in the coiler head of the card to give additional throw), saying that there is no difference in the breaking strength of the yarn and no difference in the ends-down in spinning since the system has been installed, but that there is about 1 per cent more variation in evenness. He pointed out that the re-designed tube gear simply compensates for the smaller diameter trumpet that is used.

A sketch from a Saco-Lowell publication, showing, left to right, the new design of tube gear; the coil formerly made; and the one made with the new tube gear . . . .

Supplementing the information given by Mr. Lawton, J. C. Platt, agent of Chicopee, explained that the new tube gear has a different stroke and it will fill up the can better, eliminating the hump in center of the can. Quoting figures, he said that it is possible to get 20 per cent more stock in the can by using the smaller diameter trumpet in conjunction with the re-designed tube gear, and 30 per cent more stock in the can when the compression springs are used with the foregoing. His plant does not use the compression springs.

JULIAN M. LONGLEY, who conducted the discussion on carding at the Georgia meeting

Notes submitted on this question are as follows; *Mill No. 1:* We have not tried anything but compression springs on one card calender roll. The type we used cut a groove in our calender roll in such a short time that we decided not to go further with the experiment for the time being. *Mill No. 2:* We have a number of cards equipped with compression spring attachments on the calender rolls. This gave an increase of approximately 20 per cent more stock in the card sliver cans. Test results show no appreciable difference in the evenness of the sliver, roving and yarn, and no difference, outside of a normal variation, in the breaking strength of the yarn. *Mill No. 3:* We have some drawing with inserted steel tubes, which add about 30 per cent to the sliver in the can. We have added spring bearings to the calender rolls on cards and drawing and in this way get considerably more sliver in the cans, but we have found that when the sliver is compressed too much it creates a tendency toward making a core in the middle of the sliver and it does not draft in the next process very well, causing uneven yarn —we had to abandon this practice.



A sketch used in an article on page 102, August 1940 "Cotton" describing a method of condensing sliver to get more stock in cans. See also page 90, Jan.; 131, April; 67, Nov.; and 66, Dec. 1940 issues for other discussion on this subject . . . . . .

W. H. Gibson, Jr., Martha Mills, Thomaston, Ga., has found that by reversing the direction the can turns (having can and coiler turn in same direction) more sliver can be put in the can. When both the can and the coiler head are running in the same direction the sliver does not get tangled, and when the can gets full, the pressure on the sliver will compress it more.

Mr. Longley then told his experience of putting a 12-inch can under a 10-inch coiler (and on a 10-inch turntable), and getting more stock in the larger can. He said that this gave a crossover effect and filled up the hole in the center of the can, putting in more stock, but that when the can became full there was a "chewing" effect on the sliver on top of the can and it was necessary to doff early. The mill no longer uses the 12-inch can with the 10-inch coiler.

Re-boring Card Trumpets

Is there a practical method of plugging card trumpets and re-boring? was the next question on the prepared questionnaire. Lamar Moore, superintendent of the Manchester (Ga.) Plant of Callaway, said that they always buy new ones and do not attempt to re-bore the old trumpets. B. W. Moak of Pepperell at Lindale reported satisfactory service from trumpets that had been plugged with cast iron and then re-bored to the curvature of the trumpet. L. J. Duckett, Fulton Bag & Cotton Mills, fills in the old trumpets with bronze, using an electric welder, and then drills them out. He said that it is necessary to do some "slicking up" on the filled in trumpets. The chairman asked Mr. Duckett if the trumpet is left straight or cone-shaped, and he replied that it is cone-shaped, but that about ⅛-inch from the end it becomes straight, adding that if the trumpet is not cone-shaped there will not be much compression. The chairman then said that it is much better to have somewhat of a tube on the end of the trumpet (a certain length that is straight and not cone-shaped) as this would get away from the sliver breaking.

Pieces on Long Draft Roving

What is the best method of disposing of pieces made at the back of long draft roving frames? Mr. Moak disposes of the pieces by running them back through the finisher drawing, inasmuch as his back and front drawing weigh the same. Mr. Beldon of Clark Thread said that since his mill creels at *random*, he does not see any advantage in running the pieces back through the drawing, so simply puts the pieces on top of a full can of sliver

that is to be run in the long draft roving frames. At the executive committee meeting Friday night preceding the meeting, there was much discussion on this point. It was finally decided that if a mill is *creeling solid* in order to avoid piecings, it is best to run the pieces back through the drawing, but that if the mill is *creeling at random* it is quite logical to run the pieces in on top of a full can of sliver in the creel behind the roving frame.

W. H. Gibson, Jr., had trouble with splicings on his long draft roving frames, and when the splicings got to the spinning room they would not run, so now he creels and runs the splicings over and doffs the roving frame, eliminating all piecing. Another mill runs the pieces from back of the slubber through one process of drawing, and in doing this it has been found necessary to use one tooth larger draft gear on the drawing frame to make the piece cans of sliver weigh the same as the other drawing sliver. Still another plant handles the pieces by running them through the drawing, but using only one can of pieces per delivery, i.e., one can of pieces to five cans of regular drawing.

Question No. 6 on the list was *On drawing frames with flutes only 5½ inches in length, is it practical to change metallic top rolls to covered top rolls?* Discussion brought out the fact that when the flutes are only 5½ inches, it is not so practical to change the metallic rolls to covered rolls because there is not enough of a traverse to protect the covered rolls. It is satisfactory to use covered rolls on frames having 8-inch flutes because there is more traverse. In the face of what had been said, one mill reported that it has 5½-inch length metallic rolls on drawing and it has been found practical and satisfactory to change to covered top rolls.

Efficiency on Long Draft Roving

The next question asked if there is a change in efficiency or production when changing from conventional to one-process roving. Pepperell at Lindale has experienced no change in percentage of efficiency in changing to one-process roving, but pointed out that no comparison can be made in regard to this question on a percentage of production or efficiency basis; the only fair comparison should be on an actual pound-per-spindle-hour basis. In this connection, Pepperell has experienced a slight loss in production of approximately 7 per cent, due primarily to the additional twist that the single-process roving requires. At Martha Mills, where they have long draft speeders and intermediates, there is a loss of about 8 to 10 per cent, due to the extra creeling [Martha creels solid, runs over splices and doffs].

In these snapshots at the Atlanta meeting are seen, left to right: W. H. Gibson, Jr., general superintendent of Martha Mills; Harry H. Purvis, superintendent of Chicopee (recently returned from South America); L. E. Taylor; H. B. Askew; C. Robert Mitchell; John C. Cook of "Cotton"; and others . . . . . .

The experience of the gentleman reporting for a division of the West Point Manufacturing Company was entirely different from the foregoing, in that the production is about the same on long draft roving as on the conventional roving. Whereas this mill formerly made a 22-ounce package, it is now making a 25-ounce package; there are not as many ends down on long draft as on the conventional roving, and production is gained on the better running work, offsetting the lost production in creeling and additional twist. This mill has a helper for every 10 frames of long draft to assist in the doffing and creeling.

Oiling Lifter Rods in Spinning

J. Hal Daughdrill of Callaway Mills led the discussion on spinning, the first question pertaining to the oiling of lifter rods. Answers given by several men are as follows: Joseph Johnson, Clark Thread Company, "We oil once a week for three-shift operation, using lard oil, and have no trouble." John R. Federline, Lanett Mill Division of West Point Manufacturing Co., "We oil every 60 hours with lard oil." Frank Cooper, Fulton Bag & Cotton Mill, "We oil once a week." John Hampton, Fairfax Mill Division of West Point Manufacturing Co., "We don't oil them and never have. We never have oiled and if you don't start you don't have to do it." F. B. Watson, Griffin (Ga.) Division of Thomaston Cotton Mills, "On coarse numbers where there is dust and fly you would have to oil, but on fine numbers you do not have to oil the lifter rods." Callaway Mills' representative, "One of our mills oils, but they worked better without oiling." Another member, "On filling wind we do not oil and on warp wind we oil", to which John Hampton injected "We changed and we did not start oiling."

J. HAL DAUGHDRILL, who led the spinning discussion at the Atlanta meeting . . . .

At Lindale the Pepperell Mill oils lifter rods once each 40-hour shift on both warp and filling wind, using lard oil. This mill also has found that the main preventive used to keep rods from sticking, outside of oiling, is to use painted bobbins for distinguishing colors and styles instead of marking the yarn with chalk. The subsequent elimination of chalk dust from the lifter rods has done as much as any one thing to keep sticking rods down to a minimum.

Another plant oils the lifter rods with lard oil at intervals of 240 frame hours, and besides this, does the following things to prevent the rods from sticking, (a) see that the frame is lined and leveled correctly, (b) remove all burred places from the rod with emery, (c) polish rods with steel wool, (d) see that all bushings are in good condition and that the rods do not bind in them, (e) use a guard rail between the spindle rail and the floor to protect the traverse motion and the separators from being struck by the boxes passing by the frame.

Warp or Filling Wind

The next question on spinning asked for difference in ring life when running warp and filling wind, but the question brought on other discussion as well. John Hampton said that he had run the filling wind up until the time of Barber-Colman spooling and warping and then he had to change over to warp wind in order to use the bobbins on the B-C system. He ran an ends-down test and found that there was from 12 to 13 per cent more ends down on the warp wind than the filling wind, and the front roll speed was cut 10 per cent when the warp wind was put

These pictures at the Atlanta convention include, left to right: John C. Turner, of Charles Bond Co.; W. C. Hames, of Edward H. Best Co.; George B. Snow, of Atlanta Brush Co.; S. H. Sherman, of U. S. Rubber Products Co. (Stark Mill); and L. E. Taylor, of the National Ring Traveler Company . . . . . .

in. He believes there is more ring wear on the warp wind than the filling wind because there is more strain on the traveler, the filling wind taking the lighter traveler, adding that he believes there are three to four more years' life on the ring when filling wind is run. He further brought out that in his opinion ring life in recent years has been reduced because of oil that is being put in the stock in the preliminary processes—explaining that the oil helps to retain the trash in the stock, causing an abrasive effect on the ring. There is more waste on warp wind, he said, because it is more difficult for the operative to find the end of the yarn.

At Pepperell Manufacturing Company, experience indicates that rings on filling wind last twice as long as those on warp wind. Johnson McCorkle said that his company has two mills, one of which is on filling wind and one on combination wind, and there is no noticeable difference in the wear of the rings in the two mills.

Re-working Worn Rings

In the discussion pertaining to reworking worn spinning rings, Erwin Lehmann, Langdale Mill Division of West Point Mfg. Co., said that he believes in buying new rings when they get to the point where they should be re-worked. In his mill, on coarse work, the traveler laps over the flange and will get back into the same trench when the ring is turned over. Mr. Rogers suggested that he buy a deeper ring.

A representative of the Swift Manufacturing Company, Columbus, Ga., said that his plant also buys new rings instead of having the old ones reworked. Mr. Hampton told of sending the rings from 40 frames back to the manufacturer to be re-worked, and that the company did a good job, but he finds that the life of the re-worked ring is only about 40 per cent the life of the new ring. Before sending the rings back he had the used side nicked so there would be no error by re-working the used side. He does not permit the doffers in his plant to turn the rings over when they begin to run bad, but has the entire frame of rings reworked at one time. Referring to the re-worked rings and their shorter life, he considered this to be due to the temper being taken out in re-working. A representative of Chicopee considered it impractical to re-work the worn rings.

Lamar Moore of Callaway buys the rings with only one side finished, which prevents the doffer from turning the ring over. If the frame runs bad, he then sends all the rings from the frame back to the manufacturer and has them re-polished.

Cold Rolled Arbors

What experience have you had with steel top roll arbors as compared with the cast-iron type? No one offered any experience with the new steel top roll arbors, but Mr. Rogers of Fulton Bag & Cotton Mills told of his experience a few years ago with some cold rolled steel arbors; he did not receive satisfactory service from them because when the frame was started up the rolls did not turn, letting the ends come down. When he changed to cast iron arbors the trouble disappeared. The cold rolled arbors caused too much friction.

Handling Yarn to Spooling

For a method of handling the yarn between spinning and spooling, Pepperell Manufacturing Company at Lindale has the yarn carried in doff boxes to the spooler room by the doffers. If space is available it is poured up into the spooler trough. In the event the mill is spooling a style or color which does not correspond to the style or color which the doffer has, or in the event the spooler trough is full, the doffer pours up the yarn in large boxes. It is then transferred from these boxes to the spooler trough by the spooler room yarn man when necessary.

At Martha Mills a large truck is placed in the cross alley in the spinning room, and when the doffer pushes out between the spinning frames he lifts the doff box off the doff truck and puts it on the large yarn truck until about 15 of the doff cans are stacked on the large truck. A special man takes the large trucks to the spoolers and sets the doff cans on the side of the B-C spooler. This same man trucks the empty doff cans and the empty bobbins back to the spinning room ready for the doffer to use.

Curved Web and V-Web Rings

The discussion was then changed to the subject of curved web and v-web spinning rings, with the following reports from several mill men: W. R. Beldon, "We had 10,000 spindles on v-web rings and they started up new on the same traveler and the same spindle speed. We like them very much." Another member, "We put in some curved web rings and they started off very nicely. We like them." Lamar Moore, "We have curved web and v-web rings, and they started up on the same yarn number and the same spindle speed very much better than the old rings."

Dressing for Long Draft Aprons or Cots

The chairman brought up the next question, which asked if there is a dressing of some kind to use on long draft aprons or cots. T. E. Raht, Swift Spinning Mills, Columbus, Ga., said that he had made inquiry about this among several machinery manufacturers, and they had advised him that the best dressing is the natural oil found in the cotton. Mr. Rogers said that a dressing of neatsfoot oil has been applied to his aprons because there had been excessive cracking, and the application reduced the amount of cracking. John Hampton reported using a dressing, recommending that it be applied and allowed to dry by running the frame for 2½ hours before putting up the ends, but believes that the extra cleaning necessary when using the dressing offsets the advantages gained. Pepperell has tried predressed aprons but found that they caused the front rolls to accumulate lint, so does not use them now. No dressing is applied to the aprons or cots at this mill.

Types of Spinning Wind

Next discussed were various types of winds in spinning, and their effect on processing in spooling. In order to clear the original question, the party asking it was called on and he explained that upon installing Barber-Colman equipment, his plant had changed to the warp wind to get efficiency at the spoolers, but he wished to change to combination wind to cut down on the amount of waste, which result he believed possible to achieve with the combination wind. The question was asked to determine if anyone

is running combination wind in the spinning and using the yarn on B-C spoolers. At present he is not troubled with sloughing, but is having difficulty with breakage from kinking.

Mr. Hampton said that it is possible to run the combination wind on 30s and run the stock on the B-C system, but that below 30s he has not found this possible, having to go to the warp wind to get good work at the spoolers. Mr. Peterson of Pacolet said that he had tried the combination wind in conjunction with B-C spooling (11s to 24s) and had to change to the warp wind because of break-backs in spooling; his spinning room ran better on the combination wind. A. D. Elliott of The Trion (Ga.) Company had a similar experience.

A visitor from the Opp (Ala.) Cotton Mills said that he is using Abbott winders and has eliminated all trouble by putting a 2-point cam on the spinning frames, which also reduced the amount of waste. His plant is running 13s to 20s and the frames are set up with a 2¼-inch stroke. A representative of the Columbus (Ga.) Manufacturing Company advised that his plant is running the combination wind at present on 21s to 30s, handling it on the B-C system, but finds that they need bottom formers to get the same yardage on the bobbin. He said that in going to combination wind there was a reduction in the number of break-backs (about 7 per cent). He has 16 per cent tailings (by number of bobbins). This plant is running 21s on a 2-inch ring with a 5-inch stroke, using an 8-inch bobbin. The lay gear is not changed when the number is changed.

A representative from the Canton (Ga.) Cotton Mills told of his experience with three types of winds. His plant is equipped with Abbott winders, running at 625 yards per minute. He first tried the filling wind and found too much sloughing-off, and next tried the warp wind but did not find this successful either, so is now running the combination wind, having equipped his frames with new cams, and the work is running satisfactorily. Erwin Lehmann suggested that for better running weaving it would be better to stick to the warp wind when handling the stock on the B-C system.

A test was run at Pepperell Manufacturing Company, Lindale, especially for the purpose of reporting at the meeting, two frames having been changed. Results are: a) Bottom formers gave an increase of 12 per cent yarn on the bobbin over the combination wind not equipped with bottom formers (b) Combination wind showed a decrease of 33 per cent in unclassified ends-down per 1000 spindle hours (c) Increase of 180 per cent in break-backs per 1000 spinning bobbins (d) Decrease of 35 per cent in spooler waste.

Change Traveler on Long Draft?

In changing to long draft spinning, did you change the circle of the traveler? was the last question on the prepared list. Mr. Raht said that a number of years ago his plant changed to long draft spinning and the quality of the work was so much improved that it was considered advisable to speed up the frame, and at this time the circle of the traveler was changed to compensate for the increase in speed. He saw no reason for changing the circle

Hugh M. Comer, shown as he was regaling the Georgia operating executives with an account of South America . . . . . .

of the traveler if the same speed, etc., were to be maintained on long draft, provided the proper traveler was being usd in the first place.

Mr. Federline said that he had asked the question, and had in mind the fuzziness of the yarn, adding that his mill had not changed the circle of the traveler when going to long draft spinning. Mr. Hampton considered that it would be best to use the smaller circle traveler to get good running work, provided the yarn is not too fuzzy, but that the fuzzier the yarn the larger the circle of traveler that must be run. Reports from both Chicopee and Stark Mill of U. S. Rubber Co., Hogansville, Ga., were that the circle was not changed in going on long draft, but Mr. Rogers said that his plant did change, but he didn't know if it was because of long draft. His plant went to a smaller circle.

Pepperell changed to a smaller circle —from a No. 2 circle to a No. 1 circle on No. 5 and No. 6 travelers. According to the report, this might have been due to the higher speed of the new spinning, causing the larger circle traveler to have a greater tendency to fly off. The change to the No. 1 circle gave better running spinning, but it was explained that at the same time the mill also changed the brand of the traveler and the type of traveler.

The members were still interested in the type of spinning wind to use on B-C spoolers, and Sam Burt of Avondale Mills, Pell City, Ala., was called on. Mr. Burt reported that his plant is using the combination wind and the B-C system, running 900 yards per minute from an 8¾-inch bobbin made on a 2½-inch ring, 9s, with 10 per cent tailings and from one to two per cent slubs.

This closed the technical discussion and in the drawing for hats, these were won by Harry J. Horn, Walton Cotton Mill Co., Monroe, Ga., and W. L. Hudson, Victor Ring Traveler Company.

American Cotton Manufacturers Ass'n Meets in Augusta April 24-26

The 45th annual convention of the American Cotton Manufacturers Association will be held at the Bon Air Hotel, Augusta, Ga., April 24-26, with the regular pre-convention meeting of the board of government convening April 24 at 11 A. M. The afternoon of the 24th will be devoted to committee meetings and recreation, with some type of informal entertainment being planned for the evening of the 24th.

The convention proper will open on April 25 at 10 A. M. At least two speakers of national note will appear on this program. The theme of the meeting will be "Some Internal and External Problems in the National Defense Program Influencing the Cotton Textile Industry." Golf and other types of recreation will constitute the program for the afternoon of the 25th, with the annual banquet at 8 P. M.

The business session will be held Saturday morning, April 26, at 10 A. M.

Nylon as Furnisher Brush and for Shuttle Friction

Nylon brushes serving as the furnisher brush in textile printing are said to be meeting with success, according to a recent report from the Du Pont Company, manufacturer of the monofilament brush. It is said that one nylon-bristled brush has been on duty in a busy mill for more than a year, and is still in daily use. One feature of the nylon product is its indifference to dyes, either acid or alkali, or dye solvents. Nylon bristles permit the brush to be cleaned for reuse with different colors, instead of having to have a different brush for nearly every color.

The nylon bristles are also being used in shuttles to apply proper friction to the filling, and it is said that the bristles outlast other types of bristles, and also give a more even brush of bristles in the shuttle because of the uniformity of the man-made product.

CURRENT TEXTILE TOPICS

Consumptive demand on new high plane

PROBLEMS OF PRODUCERS are continually a customary theme in the discussions of a trade paper. That is a logical thing; indeed, the reason for trade periodicals in a way. Whether an industry is moving along soundly or precariously, the problems of the future are its main subject for discussion. But undoubtedly it is the problem of meeting pressure of demand that appeals most to producers.

That was the perpetual problem of cotton manufacture, earliest of modern mechanical production industries, until about the start of this century. Then production was improved to the point where distribution could not keep up with it and, partly because of insensate demand among some producers for the uttermost return from machinery, the cotton industry languished. The evils of over-production were upon the mills.

Since the disastrous '20s a curative process has been working, including the elimination of much obsolete machinery and the education of producers to sound methods. We give that merely a passing mention and dwell rather on the fact that cotton is king—more than ever—in the textile field. With demand unprecedented—in spite of rayon developments—we find the mills again pushed to meet pressure of demand and buyers on the defensive.

Broad buying waves recur more rapidly

Broad buying movements in gray goods have been numerous since the defense program began to exert its universal influence upon the economics of the country. Recent years have shown substantial waves of demand, but the tide usually receded very fast. Buyers kept the whiphand on prices by stopping activity as soon as mills had good backlogs and were ready to ask advances. Up to the past six months, the chief exception was the war boom of late 1939 and that proved to be an abortive swing, with depression prices again in 1940.

This year to date has brought a real sellers' market, albeit with complications. On top of record cotton consumption in January, February came along with a daily rate estimated by the New York Cotton Exchange to have surpassed that of the previous month. The total—793,626 bales, against 843,274 in January—was less because of a short month with holidays. Yet demand for goods was not satisfied and does not stand to be for many months to come.

Therein lies the complicating situation, though a gratifying one. Buyers have been on the defensive in the most permanent way for many years. They have bought on a sharply rising basis of prices for gray goods and then found their requirements unsatisfied. Manufacturers have enjoyed not long since the unusual experience of withdrawing from the market temporarily to adjust themselves.

Government program promotes assurance

Consumer purchasing power of the current "war" boom is one of the things which contributed to an extraordinary movement of gray goods in the first quarter of 1941. For a time there was fear that supplies might be accumulating in distributive channels. This idea was eradicated many weeks ago, on evidence in the market that the movement of finished cotton merchandise was commensurate with that in gray goods.

Then came the passage of the lease-lend bill with a newly stimulating influence upon the defense program and a concurrent effect upon buyers. Some purchasers of gray goods for civilian uses promptly indicate their intention to buy ahead as far as they could. This was in the belief, strongly supported by the rising trend of values at the time, that full production would be needed for a long time and that prices could not be expected to react during the continuance of the war.

Meantime, mills were already finding it difficult to arrange satisfactory deliveries in many cases on certain constructions that had felt most the broadening of demand since last summer under the defense program. Instead of trying to find constructions that would appeal to buyers, mill men were constrained to limit the variety of fabrics. Before the middle of March, there was a noticeable tendency toward restriction of lines to the most essential.

Better balanced gray goods demand

Among the standard groups, on the contrary, March trading revealed a spreading activity. Notwithstanding the record rate of mill production in preceding months, the demand for gray goods had not been well balanced. The heavier weaves had derived the chief

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National Cotton Week May 16-24, 1941

National Cotton Week will be held May 16-24 this year, which again takes in two week-ends to allow shoppers to get in an extra day or so of buying to take advantage of merchandising specialties offered by retail outlets. The campaign to make this 1941 National Cotton Week the greatest single merchandising event in cotton's long history is well under way. Several thousand advance proofs of the poster have been sent to key representatives of 150,000 cooperating wholesale and retail outlets and to 6,000 civic, trade and public groups throughout the country.

Promotion activities include retail trade conferences in key cities to stimulate activity among retailers, the press, civic, educational and consumer organizations; development of civic cooperation; publication of a retail store bulletin as a merchandising guide; promotion of special cotton fashions; organization of consumer cotton clinics, under retail store sponsorship; promotion of cotton gift wares for enlisted men in armed forces; cooperation of soap, laundry, washing machine, etc., advertisers in their campaigns; newspaper mat service and releases to radio stations; special events such as cotton balls, cotton fiestas, etc.

National Cotton Week is sponsored by the Cotton-Textile Institute in collaboration with the Cotton Consumption Council.

The 1941 National Cotton Week Poster

benefit from defense orders which had given the market its remarkable push. The mass-production lines were reported still to be lagging relatively.

During the past month a corrective tendency has become manifest, with buyers perforce turning to substitute constructions where the defense program had complicated matters. Delivery tangles were numerous, with mills unable to make suitable deliveries even through the second quarter of the year. Merchants were constrained, in fact, to ask buyers to pursue a more conservative policy in making commitments.

Turning of demand to the mass-production lines brought a better balanced market as to prices as well as distribution of business. For a time these goods were relatively on bargain levels, but the new demand brought quick advances. By the middle of March, it was said in the trade, printcloths and sheetings were highest since June of 1937. They were, nevertheless, considerably under the March peaks of that year and the level of the 1933 boom.

Larger backlogs not excessive

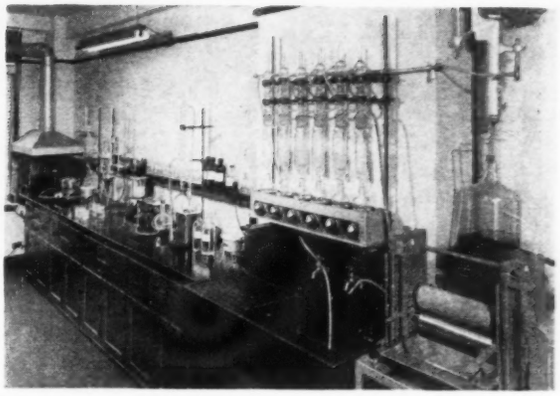
It was disclosed during the past month that volume of sales in printcloths and related items during January was the largest for any month since September, 1939. Over a ten-day period from late February to early March, approximately 80,000,000 yards were sold. Altogether the business of the first quarter accumulated a backlog of unfilled orders calculated to assure undiminished mill activity into the second half of the year.

Such extraordinary conditions naturally would give rise to apprehensions over possible burdensome inventories. In cotton goods, however, as in other industries it was quickly asserted that the inventory position was very sound in relation to the national rate of consumption. Merchants in cotton goods said stocks at the first of March were smaller than they should be in view of the sharp increase in consumer purchasing power.

Suggestive of the recent conditions, the Federal Reserve Board reported industrial production at another high record in February, under stimulus of the defense program. The seasonally adjusted index was 139, same as in January, but it compared with 111 for a year ago and a monthly average of 122 last year.

New England Mill Situation

COTTON manufacturers of this district entered the second quarter of the year in a very healthy position. Operations of mills had started the year at the highest level since 1930, according to various indices, including volume of cotton consumption. Backlogs continued to grow through the first three months of 1941 and at mid-March the orders were running considerably above the rate of mill production.



• Interior section of the modern laboratory for testing and experimental work on textiles established by Corn Products Sales Company at Greenville, S. C. Resources of new laboratory are available to mills wishing information or assistance regarding warp sizing, finishing and other textile problems.

Since fine goods are not in the class of cotton cloths most affected by defense plans, New England mills did not reflect fully the record cotton consumption of the country's industry in January. The best rate for 11 years in January left the district still operating 10 per cent below the 1937 high point. The 102, 508 bales consumed that month, however, compared with a January average for 1933-1941 of 80,-981 bales.

February marked a continuance of high activity, with 94,227 bales of cotton consumed in the section against 78,166 for the same month last year. In view of the shortness of the month, accentuated by holidays, this total indicated maintenance of the rising trend which has produced wide gains over a year previous for every month since September, 1940, except November, which had a relative loss.

Mill production well sold ahead

By the first of March the backlog of unfilled orders in New England cotton textiles was sufficient to keep operations at the high level for many weeks. Last month brought a further heavy turnover in fine constructions, assuring sound production well through the second quarter. A rising tendency to prices, moreover, was a criterion of an extended period of profitable business for the manufacturers.

Firmness which started in the fall has continued for half a year, resulting in a broad rise of prices. This condition has been carried over to finished goods in an emphatic way during recent months, especially in March. The same month also brought emergence of raw cotton into a higher range. With cotton costs and wage tendencies bullish, mills have been reluctant to sell fine gray goods more than a few months ahead, especially in staples.

At the same time, the demand here for raw cotton quickened last month in response to the larger requirements of heavy mill production and confidence in the long future. Naturally the firmer prices for raw cotton helped this movement along, although dependent upon domestic demand almost altogether. At the time of writing, prospects of government legislation in favor of cotton growers also affected cotton prices.

Labor conditions hold attention

Government defense work in various lines has affected mill labor in a way that is further indicated by a recent report from New Bedford. The office of the State Employment Service there noted a definite shortage of textile workers in relation to the increased production of existing mills of that leading fine goods center.

Talk of general textile wage increases was rife when the American Woolen Company on March 6 announced signing of an agreement for a ten per cent raise to go into effect on May 12. This was quickly followed by announcements from other units, big and small, around New England.

One of the first cases was that of the five Maine cotton mills of New England Industries, Inc., with an announcement of a 10 per cent increase effective March 24. This was followed by similar announcements generally through New England.

At that time reports from Washington were that the committee on establishment of a new minimum wage scale for the cotton, silk and rayon industries was getting ready to begin deliberations. It was felt that unionized mills might be forced to grant increases, however, before a new minimum was set by the government. Such action appeared likely not to come before fall.

"THE SITUATION" as seen Across an Executive's Desk

March 18, 1941

EVERYONE who heard the President's speech on March 15 realizes now, at least, that our country is definitely committed to war against the dictators. Just now it is not a shooting-war we are in, it's a shipping and supply-war. But war is war. And the time of making sacrifices for the preservation of our way of living is upon us. As Mr. Roosevelt said, we are not going to be called upon to give up any of our *rights* but all labor and capital will be called upon to give up some *privileges*. This is the most important message to the people our President has delivered. And it is up to the O. P. M. to see that all phases are carried through.

"Labor Must Help"

The President's statement that industry will have to give up high profits through paying high taxes is a reiteration of fact which industry faced when it knew the contents of the excess-profits tax bill. But the President's statement that labor will have to work longer hours, forego strikes, and in other ways become the first line of America's defense through becoming and remaining our "production soldiers" is the most reassuring thing we have heard in a long time.

For months now, with the accumulation of strikes in various defense industries, even in textiles, it seemed it was everybody's war but labor's. With the President's challenge surely labor will rally to do its part manfully, for the privileges labor enjoys in this country are not to be found elsewhere. It is never hard to give up, temporarily, a privilege when by so doing we can permanently preserve that same privilege for our children.

Before the last war we had one-shift operation. Due to excessive war demand we went to two shifts. This war has forced mills throughout the industry on three-shift schedules. The result is a scramble for experienced labor; greater need for learners, both new learners and promotion learners; and indirectly a result is also the preparation by the Wage-Hour Administration to study recommendations by an industry committee to raise the minimum rates in textile operations. Surely with the highest employment level in the history of the textile industry, and probabilities of higher wages before the year is out, our mill workers, who we have so often boasted were the type of which the backbone of America is built, will do their part by an all-out effort to keep the plants running.

We say this feelingly, thinking of the strike at Proximity Mills last week. That company, always noted for fair play and high pay, on defense work, was tied up tight by an unjustified walkout.

Southern textile labor is built of stern stuff—and the love of country and home is ingrained. And we hold that if superintendents take the workers into their confidence as to what is being done and why—if they point out that most profits will go to defense taxes—labor will do its part and put each plant on the map as 100 per cent for all-out effort.

New Wage-Hour Committee

Just now it will be difficult to forecast wage-minimums, but with the committee recently announced to meet on April 14 some equitable recommendation should be offered and accepted after the routine hearing. The committee personnel appears on page 77.

We have only one recommendation to offer: that the hearings be short and snappy, and that none of the recriminations such as existed during and after the last industry committee recommendations be allowed to exist.

About 650,000 workers are included in the cotton-textile industry. It is estimated that 200,000 will be directly affected by any raise in the present minimum wage rates. But everyone realizes that by raising the minimum wages every department in the mill must be adjusted to some extent.

Legislative Developments

There are several interesting developments taking place in legislative circles which further affect the cotton-textile industry. Among them of course are the various plans for raising revenue to finance the farm program through various means of tax such as processing tax, Certificate plan, etc. One of the most recent plans has been promulgated by Oscar Johnston by which he proposes to return to the 1935 plan for cotton. Mr. Johnston was author of that plan and it is generally acclaimed as the most satisfactory and economical of any practiced during the last eight years.

The plan, to which Mr. Johnston would have the department return, provides that producers be paid the difference between the sale price at the gin and 12 cents. He would fix the loan at 10 cents. Parity and soil conservation payments on normal production would remain the same, 1.37 cents a pound each, or a total subsidy of 2.74 cents.

In 1935, the year in which a similar plan was in effect, no cotton went into the loan. On the present estimate of a crop of 11,500,000, a domestic consumption of 9,000,000 and a million bales exported, Mr. Johnston would have the Government take over the remaining 1,500,000. In any event, the producer would be assured of 12 cents.

Secretary Wickard is understood to favor a 12-cent loan which Mr. Johnston believes will result in accumulation of an increase in the already burdensome surplus of loan cotton. The 1935 crop was financed with an expenditure of $35,000,000, and Mr. Johnston does not believe the cost this year would exceed that figure, and certainly would not amount to more than $50,000,000.

Parachuters Wear Rayon Jump Suits

Men of the 501st Parachute Battalion now training at Fort Benning, Ga., wearing the new Crown Tested rayon and cotton uniforms recently adopted by the Army.

The 501st Parachute Battalion in training at Fort Benning, Ga., has adopted jump suits made of rayon, borrowing the type of fabric from the gridiron, where it has been widely used in football trousers. The fabric is a special cotton-backed rayon twill, tightly woven, composed of half rayon and half cotton, and consisting of 3-thread long staple cotton warp with a filling of high-strength continuous filament viscose rayon yarn. The smooth surface of the material is said to help prevent fouling of the parachute shroud lines, and protects landing parachutists from injury that might be received on tree limbs or bushes. Fabric in the suits is made by William Skinner & Sons of American Viscose "Tenasco" filament rayon.

Laurels—

But Not to Rest On!

IT pleases this Company, naturally, that our fifty years of experience have been consistently highlighted with the sturdy, lasting business accomplishments which insure a steady, durable growth. Today we are also keenly sensitive to the resulting increase in our responsibility—an increased obligation to friends and patrons which keeps our eyes and our ideals centered on the future, rather than on the past. You will find this ingrained trait of looking always ahead especially in evidence in our Factoring Division.

Use Southern Factoring for More Profitable Operations

Factoring Division

THE TRUST COMPANY *of* GEORGIA

ATLANTA

MEMBER FEDERAL RESERVE SYSTEM

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

Senator Bankhead has offered an amendment to the AAA authorizing and making mandatory a loan of 100 per cent of parity, but he is understood to be amenable to an alternative plan which will insure producers a fair income and save the Government millions in loans and storage, if something equally satisfactory can be worked out.

Mr. Johnston insists that selling the cotton at the prevailing price, whatever it is and the producer receiving an additional subsidy of the difference between the price and 12 cents, will move the crop, turn it into channels of trade, prevent accumulation of more loan cotton and save the Government millions.

An additional plan is that recently brought in by Representative Fulmer which is the same as the Pierce Bill or the Certificate Plan with the exception that Mr. Fulmer would like to have a compensatory tax equal to the tax on combed mercerized yarn placed upon jute. This of course is a neat way of plugging for cotton bagging for cotton bales.

With the Defense Program at a high speed, consumption of cotton has reached an all time high. It is easy to estimate that domestic cotton mills will consume between 9,500,000 and 10,000,000 cotton bales this year. The 10-year average is a little over 6,000,000 bales. Prices are going ahead in direct ratio to the demand and supply on all cotton goods, but there is little or no evidence at this time of speculation in the markets. It is a normal price rise due to increased costs and increased demands.

Tax Clause in Army Contracts

With the high mill activity due to consumer demand as well as to the Defense Program and the discussion of various types of processing tax plans those mills on Government orders were very much relieved to receive notice recently that a clause providing for contractors to include in their invoices any processing tax charge imposed by Congress after the date for the opening of the bids. For the record's sake the clause is as follows:

"Prices bid herein include any other Federal tax or charge heretofore imposed by the Congress. If after the date set for the opening of this bid, The Congress shall impose any sales tax, duty, excise tax, or any other tax or charge, directly applicable to the supplies covered by this bid, or to the materials used in the manufacture thereof, or directly upon the importation, production, processing, manufacture or sale of such supplies or materials, which tax or charge must be borne by the contractor because of a contractual obligation or by operation of law, and if the contractor has paid such tax or charge to the Federal Government or to any other person, then the amount of such additional tax or charge so paid will be charged as an addition to the bid price and entered on invoices as a separate item."

This action on the part of the War Department automatically relieved manufacturers of one worry and as a result they felt more free to bid upon pending orders. A few days later for instance, when the bids were opened on 8.2 oz. Army Twill for 38,000,000 yds. of goods, 53,000,000 yds. were offered.

Cotton Bales for Bomb Shelters

Another item which shows the trend of the times but really comes under the New Uses Department is that of proposed cotton bomb shelters developed by E. C. Wallace, New York engineer. Mr. Wallace discussed his plan with some members of the Congress and pointed out that his shelter consisting of 7-foot thickness of cotton would resist the penetration of a 6,000-pound bomb falling from 30,000 feet. Whereas a 2,000-pound bomb falling 15,000 feet would penetrate 6 feet of re-inforced concrete. Mr. Wallace said the cotton could be fire-proofed as an additional protection against incendiary bombs. Of course his plan started enthusiasm among southern representatives in Congress and it is expected to have a demonstration of this bomb-shelter's ability to withstand attack within a short time.

Other research developments are being made along more peaceful lines. Dr. K. A. Hertel, Dean of Physics Department of the University of Tennessee, has developed a fibrograph to measure fibre lengths and fineness. Dr. Hertel holds that better cotton fabrics can be had due to this graph which measures the fibre surface per unit weight of cotton and will be extremely helpful in research work on longer wearing qualities of fabrics.

"The Convention Season Opens"

And as these things go ahead, we face again the month of conventions, with the Southern Textile Exposition at Greenville, S. C., the Knitting Arts Exhibition at Philadelphia, and the American Cotton Manufacturers Association's annual meeting to be held this year at Augusta, Ga. The annual meeting of the Alabama Cotton Manufacturers Association is to be held at Mobile preceding the Augusta meeting. and the Georgia manufacturers will follow the Augusta meeting with their house-party at Sea Island in May. Are you planning to attend all of these? You should at least plan to attend the first three and the meeting of the association in whose state you reside. Never in the history of the industry has it been so important for executives to be on hand to hear discussions of problems affecting their industry and its immediate and far-flung future, so it's "so long" this time and we'll see you there.

New Textile Publications

National Safety Council, 20 North Wacker Drive, Chicago, Ill. The preliminary 1941 edition of "Accident Facts", the Council's statistical yearbook. Gives prompt, though incomplete, information on 1940 accident totals. Regular edition containing elaborate analysis of every phase of the accident situation will be off the press in June.

Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia, Pa. Literature describing a new improved selvage harness consisting of 2 metal straps, 2 U-hooks and 2 blind heddles.

Metasap Chemical Company, Harrison, N. J., (subsidiary of National Oil Products Co.), "Metallic Soaps", containing complete information on numerous metallic soaps, compiled primarily for technical men engaged in either pure or industrial research.

The Foxboro Company, Foxboro, Mass. Literature descriptive of the company's recorder-controller, said to be one of the most versatile instruments in the industrial world.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Leaflet describing two large totally enclosed fan-cooled type CS motors (frames 32 and larger). Request from Dept. 7-N-20.

E. F. Houghton & Co., Third, American and Somerset Sts., Philadelphia, Pa. Literature describing woolen and worsted oils, fiber conditioners.

Rhode Island Warp Stop Equipment Co., Pawtucket, R. I. Booklet showing installations of the K-A electrical warp stops, and diagrams showing how the motions operate.

U. S. Department of Commerce, National Bureau of Standards, Washington, D. C. Announcement of commercial standard for woven textile fabrics, testing and reporting (CS59-41), which is now a recorded standard of this industry.

Harold Joe Davis, 3927 East Admiral Place, Tulsa, Okla. "Dangers and Health Hazards of Fire Gases," a booklet prepared by Mr. Davis, who is safety engineer. Price 25 cents postpaid.

Elliott Service Company, 219 East 44th St., New York City. "Foreman Training Today," its vital importance in the defense program, an address in booklet form by Glenn Gardiner.

The Brown Instrument Company, Wayne and Roberts Avenues, Philadelphia, Pa. 1941 calender showing modern industrial processes in a humorous vein. Also includes helpful engineering information in the form of charts.

The American Pulley Company, Philadelphia, Pa. Complete catalog on the new reduction drive. When used in conjunction with the company's wedgbelt drive catalog, supplies all information necessary to lay out a complete drive.

American Crayon Company, Sandusky, Ohio. Brochure featuring the many different kinds of crayons for use in industries.

Johnson Bronze Company, New Castle, Pa. The new catalog listing bushings, bearings, bar bronze and babbitt. Carries all information necessary for ordering; illustrates each type of equipment.

E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del. New bulletin on organic chemical specialties, describing a number of products of the fine chemicals division which are useful in the textile industry. Most of the materials covered have surface-active properties, and are used where wetting, cleaning and emulsification are involved.

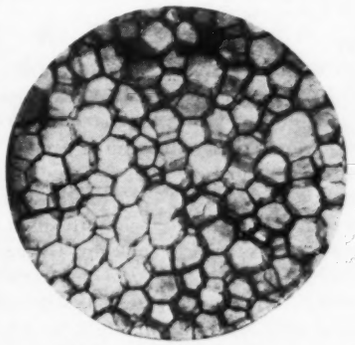
Hydrocarbon Chemical and Rubber Company, Akron, Ohio. Illustrated 8-page booklet in Hycar, group of synthetic rubbers, which are oil resistant.

E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del. Bulletin describing the uses of sodium silicate as an adhesive, binder, detergent and deflocculant.

General Electric Company, Schenectady, N. Y. Bulletin GEA-3531 on "How to Select Control for D-C Motors."

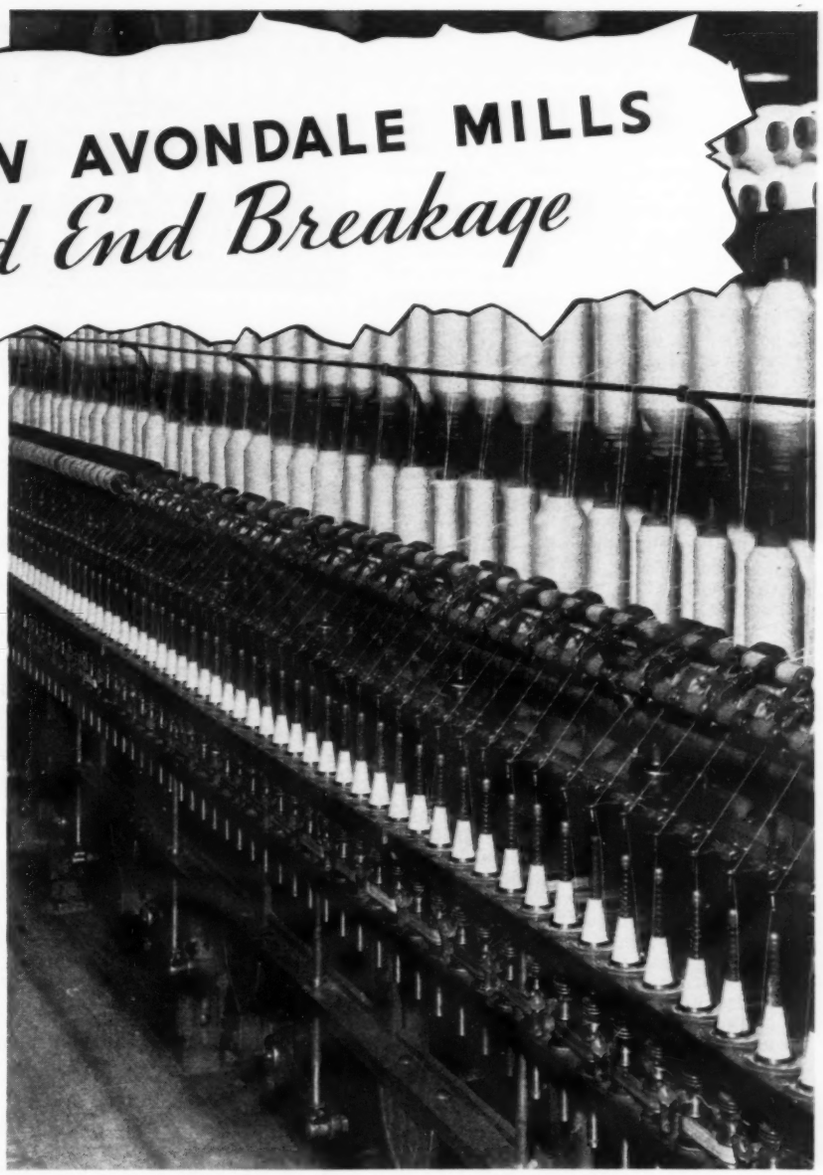
The Personnel Institute, Inc., 225 North Wabash Ave., Chicago, Ill. "The Use of Ability and Aptitude Testing in Business", a 16-page booklet giving a simple explanation of the plan followed by the Institute in building tests for all types of jobs.

HERE'S HOW AVONDALE MILLS *Reduced End Breakage*



WHY CORK GIVES BETTER RUNNING WORK

CORK'S TINY AIRTIGHT CELLS, *magnified in the photomicrograph shown above, give cork cots plenty of "come-back"—which means less end breakage and better running work.*



THERE'S LESS END BREAKAGE *in Avondale Mills' Eva Jane Plant, located at Sylacauga, Alabama, since Armstrong's Cork Cots were installed. One of the spinning frames, equipped with these trouble-saving cots, is illustrated above. Several other plants operated by Avondale Mills also use Armstrong's Seamless Cork Cots.*

LIKE hundreds of other mills all over the country, Avondale Mills have substantially reduced end breakage in their Eva Jane Plant by using Armstrong's Cork Cots. This fact alone would interest any yarn manufacturer, but there's lots *more* that Armstrong's Cork Cots can do to increase your profits! Records of actual use prove that Armstrong's Cork Cots give better running work . . . fewer top roll laps. Production men in mills using these cots know that they turn out a more uniform product and eliminate eyebrows. Furthermore, they make much less clearer waste.

These better cots cost no more than your old roll coverings! And your savings begin right away, because of faster, cheaper assembly. But what's even more important—your savings will *mount steadily* as time goes by, because the initial life of Armstrong's Cork Cots is longer . . . and the surface of each cot can be rebuffed *3 or 4 times*, at a unit cost of about one half cent!

Let an Armstrong representative show you actual production figures and savings of mills spinning your range of numbers on cork. Write Armstrong Cork Company, Industrial Division, 923 Arch Street, Lancaster, Pa.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

New Orleans, March 15, 1941

COMMENT on the COTTON MARKET

THROUGH SHEER NECESSITY there developed a good demand for raw cotton the past month to feed the active spindles, which is reflected again in record breaking February domestic consumption of the staple. The demand, mainly from American mills, was in evidence throughout the month, or since the middle of February. At that time, one month ago, it was reasoned by some in the trade that values then had probably attained a level sufficiently high to induce owners to part with a portion of their holdings. The trade, however, found offerings light, due largely to a scarcity of "free" cotton and certificates, the latter being held at a good premium, which made it difficult to obtain loan cotton except at an advance. Small exports were without influence on the market.

Prospects for a higher than this season's government loan on the next crop, as well as the impression that a smaller acreage will be planted to cotton this year, gave added support to the market, especially to new crop options which shared most in the recent sharp advance. Compared with one month ago, contract values show gains of from $3.55 to $4.25 per bale on old crop months, while new crop deliveries scored a rise of from $6.35 to $6.90 per bale, while Middling spots, New Orleans, gained $4.55 per bale. A contributing stimulant to the late advance, which brought values to the highest level attained thus far this season, was the adoption of the lease-lend bill.

As the program gradually unfolds itself, it becomes apparent that the nation's present industrial productive capacity will likely be taxed to the utmost to meet the demands of the government to aid Britain and save Democracy. Already some industries have made new productive records, and domestic consumption of raw cotton, now on a record breaking basis, appears to have been under, rather than over-estimated since it now points to the probability of being about nine million bales, perhaps larger.

The bill having become a law, putting it into execution has already started. But this is only the beginning of the program. When the full import of its significance is realized, it's importance will be in evidence in a far greater manner than it appears today. At that time the full resources and the man-power of the country will be felt, or rather realized by the enormous production of everything that a world war requires. The United States has been designated as the Arsenal of Democracy and all that it implies.

By next winter, perhaps by fall, it is thought there will not only be a scarcity of skilled labor, but a shortage of common labor as well. In other words it appears that the present army of the unemployed, which is decreasing fast now, will likely have been reduced to almost a minimum by industry taking up the slack before the expiration of 1941 even if America keeps out of the conflict, whereas, if the United States becomes involved in war, in the Atlantic or Pacific, workers are likely to become all the more scarce.

It is only natural, therefore, to anticipate a further, perhaps a much greater expansion in domestic trade, wholesale and retail, because of the people of the nation, men and women, being engaged in profitable employment. Farmers are due to share in the prosperity already at hand and likely to increase because of the enlarging purchasing power of the masses, which usually spells higher prices for products of the soil.

Nevertheless, while the present domestic outlook is optimistic, there is no telling what is really in store for the future, for while one can see visions of probably great prosperity ahead, there is no telling how international politics will develop, or how the wars in Europe, Africa and Asia will progress, or when peace will return to the world. Early peace could upset all expected to come of a long war, whilst a long war would likely prolong the present prosperity, perhaps make it greater eventually.

As regards the 1941 crop, seeding of the soil is starting in early districts, but there is nothing from Washington as yet as to the program to be adopted. So far as moisture in the soil is concerned, conditions seem to be satisfactory, but the winter was mild, which is favorable for hibernating and propagation of the boll weevil and other damaging insects. Early private advices indicate some increase in the use of fertilizer, perhaps a slight decrease in the acreage.

CENSUS REPORT

United States—Bales—	This Season	Last Season
Consumption of lint in Cotton Growing States, Feb.	674,000	565,000
Consumption of lint in New England States, Feb.	94,000	78,000
Consumption of lint in All Other States, Feb.	25,000	18,000
Consumption of lint in the United States, Feb.	793,000	661,000
Consumption of lint in Cotton Growing States, 7 months	4,461,000	3,995,000
Consumption of lint in New England States, 7 months	612,000	575,000
Consumption of lint in All Other States, 7 months	148,000	134,000
Consumption of lint in the United States, 7 months	5,221,000	4,704,000
Mill stocks, Feb. 28	1,905,000	1,700,000
Mill stocks, Jan. 31	1,875,000	1,776,000
Stocks in public storage and at compresses, Feb. 28	14,039,000	12,177,000
Stocks in mills, pub. stg. and at compresses, Feb. 28	15,944,000	13,877,000
Stocks in mills, pub. stg. and at compresses, Jan. 31	16,543,000	14,977,000
Cotton spindles active during Feb. in C. G. S.	17,229,000	17,170,000
Cotton spindles active during Feb. in New England States	4,922,000	5,019,000
Cotton spindles active during Feb. in All Other States	618,000	612,000
Cotton spindles active during Feb. in the U. S.	22,769,000	22,801,000
Cotton spindles active during Jan. in the U. S.	22,821,000	22,880,000
Mill stocks in Cotton Growing States, Feb. 28	1,569,000	1,432,000
Mill stocks in New England States, Feb. 28	285,000	215,000
Mill stocks in All Other States, Feb. 28	51,000	53,000
Mill stocks in the United States, Feb. 28	1,905,000	1,700,000

AMERICAN COTTON CONSOLIDATED MOVEMENT
(Figures of the New Orleans Cotton Exchange)

August 1 to March 15—Bales—	This Season	Last Season
Receipts at U. S. ports	2,878,000	6,747,000
Exports to Great Britain	338,000	1,680,000
Exports to France	———	703,000
Exports to Continent	331,000	1,704,000
Exports to Central and South America	17,000	45,000
Exports to Orient	99,000	1,103,000
Total exports	785,000	5,236,000
Total stock in New Orleans, March 15	539,000	737,000
Stock in all U. S. ports, March 15	3,469,000	2,927,000

New Edition of "Handbook of Industrial Fabrics"

Wellington Sears Company, 65 Worth St., New York City, have issued the third edition of their "Handbook of Industrial Fabrics", in which considerable material has been added to this splendid reference book by George B. Haven, the first edition being issued in 1934. The book contains 789 pages compared with 538 in the first edition. All information has been reviewed and brought up-to-date.

Included for the first time is a comprehensive textile bibliography, containing papers presented before the American Society for Testing Materials, and including a complete list of United States Government publications relating to textiles and a detailed list of books and periodicals relating to textiles as compiled as a textile reading list by the Bureau of Foreign and Domestic Commerce of the Department of Commerce, and the Department of Agriculture.

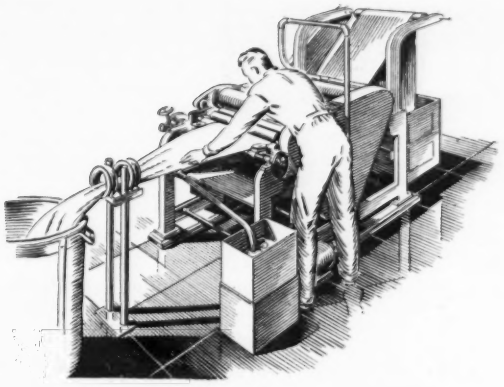
The price of the book remains at $2.00 per copy.

National Oil Again Expands

Purchase of a six-story brick building adjoining the present plant has been announced by National Oil Products Co., Harrison, N. J.—the third expansion of this plant in the past year. Contracts for re-modeling and modernizing the structure, for use as additional warehouse facilities, have been let.

Japan to Make Synthetic "Better Than Nylon"

Word has come from Tokyo that Dr. R. I. Shokis of the Kyoto Imperial University has invented a synthetic fiber said to be "better than nylon." The fiber will soon be made on a production basis. A plant covering 5,320 square feet and costing 150,000 yen will be erected. The products can be finished wherever viscose is employed.



. . . every desired finish on tubular knit goods!

"We are producing finishes hitherto unobtainable in the knit goods field as the result of installing a Tube-Tex Double Extractor and Processor recommended by Butterworth Engineers.

"Now our competitors must take a back seat when the specification calls for a special finish—softening, sizing, filling, stiffening, non-curling, water-proofing, lusterizing, delusterizing, weather-proofing or fire-proofing.

"The Tube-Tex Machine opens the fabric to its tubular proportions, extracts it uniformly, treats it chemically and delivers it flat folded—ready for drying—at speeds ranging from 6 to 48 yards per minute.

"We have found the Tube-Tex Machine adaptable for all types of circular knit fabrics in all widths and qualities, ranging from light rayon to heavy cotton worsteds for underwear and outerwear.

"Our cost figures show that the Tube-Tex has actually paid for itself in time, labor, and power savings. "We can only marvel at this powerful competitive advantage."

Trying to "get by" with out-of-date equipment in the wet end of textile finishing is poor economy, no matter how you figure it.

With business as it is today, new equipment pays for itself two or three times as fast as it does under ordinary conditions.

For more than 120 years, our entire time and effort have been devoted to promoting efficiency in the wet end of textile finishing. Butterworth Engineers know all the small advantages in production costs which, collectively, make the difference between profit and loss.

Let us work with you in determining whether modern Butterworth Machines or improved plant layout will help you to improve your competitive position. Write us fully about your requirements.

H. W. BUTTERWORTH & SONS CO. Phila., Pa., Serving the Textile Industry Since 1820. Offices: Providence, R. I. and Charlotte, N. C. In Canada—W. J. Westaway Co., Hamilton, Ont.

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

Butterworth

Licensed Manufacturers and Agents for Tubular Textile Machinery Corp., 27 W. 20th St., New York.

TIMELY NEWS ITEMS with a TEXTILE SLANT

Dr. A. E. Boss has been named manager of pigment sales of the Columbia Chemical Division of the Pittsburgh Plate Glass Company. He was formerly manager of the technical service department and will establish headquarters in New York, devoting his time to the further development of Calcene sales and the establishment of a new program in the interest of Silene, a calcium silicate pigment.

Clarence R. Duncan, formerly assistant superintendent of the Melville Mills, Inc., and the Glenn Manufacturing Company, Lincolnton, N. C., has been appointed sales representative in sections of the North and South Carolina territory for the Victor Ring Traveler Company, Providence, R. I.

Mr. Duncan

J. W. Simmons, Jr., graduate of Georgia School of Technology, and recently associated with the Talladega (Ala.) Cotton Factory, has become plant superintendent of Stodghill & Company, Inc., Atlanta, Ga., manufacturers of sizing material and textile chemicals, succeeding Joe Oliver, who has been called into the army for a year's training as an officer in the O. R. C.

Charles W. Carvin and **Moe P. Epstein** have been appointed vice-presidents of the Industrial Rayon Corporation. Mr. Carvin has been sales manager of the yarn division since 1937 and Mr. Epstein has been merchandise manager since that time.

Ben J. Warwick has been appointed as a sales representative for Truscon Laboratories of Detroit, Mich., to work with the textile mills in the Carolinas. He will sell this company's line of industrial paints, waterproofing and floor hardeners, and will shortly establish headquarters at Charlotte, N. C. He is a native of North Carolina and is familiar with the Truscon line, having been connected with this company previously.

James M. White has been appointed assistant general works manager for Allis-Chalmers Manufacturing Company, Milwaukee, Wis., having formerly been manager of the company's La Porte works for the past six years. Mr. White is a graduate of the Alabama Polytechnic Institute.

What the Southern Mills are Doing

Judson Mills, Greenville, S. C., which has been selling the homes in the mill village, recently sold 80 more houses in the No. 1 mill village, bringing the total of village houses sold to 325. It is understood that the mill has been reinvesting proceeds of the sales in a mill modernization program, which includes the purchase of several hundred new looms, additional twisting machines for the rayon throwing department, and complementary equipment for handling rayon.

Renfrew Bleachery, Travelers Rest, S. C., is installing new equipment in the power plant extension, including boiler, stoker and bricksetting by Combustion Engineering Company, Inc.; automatic coal handling equipment by Link-Belt Company; concrete stove silo by Neff & Fry Company; and automatic coal scale by Richardson Scale Company. J. E. Sirrine & Company, Greenville, S. C., are engineers.

Tifton (Ga.) Cotton Mills has acquired a group life insurance policy involving a total of $148,500 for the protection of 231 employees, with benefits ranging from $600 to $1,500 to each worker, according to rank. Premiums will be paid in part by the workers themselves and the remainder of the expense will be assumed by the employing company. The policies are issued on the contributory basis.

January & Wood Company, Maysville, Ky., has under construction a 102x102 brick and concrete two-story, fireproof warehouse for finished goods. The company recently replaced old style spoolers with Abbott circulating head automatic winders. New dyehouse installation includes all stainless steel equipment for both skein and package dyeing.

Union Bleachery, Inc., Greenville, S. C., is extending the power plant. Equipment includes Babcock & Wilcox boiler; multiple stoker furnished by American Engineering Company; boiler bricksetting contract awarded to Fisher-Halliday Company; two Thermix stacks with built-in induced draft fans by Prat-Daniel Company. Engineers are J. E. Sirrine & Company, Greenville, S. C.

Mountain View Mill, near Kings Mountain, N. C., has been purchased by Charles S. Williams, who plans to install machinery immediately for the manufacture of fine combed yarns. The name of the mill will be changed to Frieda Manufacturing Company. It is reported that the mill will have 6,000 spindles.

Hanes Dye & Finishing Company, Winston-Salem, N. C., will build two new buildings, one to be 70x30 feet of metal on wood construction and costing about $3,500, and the other to be 60x160 feet, to cost about $11,000.

Lexington (N. C.) Silk Mill, a unit of the Burlington Mills Corporation, Greensboro, N. C., will build an addition which will almost double the present floor space of the plant.

A group of business men of York, S. C., have purchased the old Lockmore Cotton Mill building in York from Textiles, Inc. Plans are to establish a cotton mill.

Efird Manufacturing Company, Plant No. 4, Albemarle, N. C., was damaged by fire to the extent of about $100,000, the loss being fully covered by insurance.

Merrimack Manufacturing Company, Huntsville, Ala., is reported to be planning expansion and modernization of mills at Huntsville and also at Lowell, Mass.

Dixie Finishing Company, Emporia, Va., has planned an expansion program which will nearly double the capacity of the plant.

Harmony Grove Mills, Commerce, Ga., is installing new equipment in the cloth room, opening room, picker room and slasher room.

Tubize Chatillon Corporation, Rome, Ga., plans to build an addition to the plant 100x800 feet. Cost with machinery is estimated at $1,450,000.

John P. Maguire & Company

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Check credits, assume credit losses, and advance in cash, the net value of shipments as made.

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Southern Representative
TAYLOR R. DURHAM
Liberty Life Building
Charlotte, N. C.

NEW EQUIPMENT and MATERIALS

New G. E. Fluorescent

General Electric Company, Lamp Department, Nela Park, Cleveland, Ohio, has announced the development of a new 36-inch Mazda F (fluorescent) lamp rated at 65 watts and available in 3500-degrees white and daylight. The new 3-foot lamp is designed to provide lighting designers with a more flexible tool for creating well-styled and efficient commercial luminaires. The lamp is suitable for textile mill offices.

◆

Cincinnati Rubber Makes Multiple V-Belts

Cincinnati Rubber Manufacturing Company, Cincinnati, Ohio, has entered the field of multiple V-belts and can supply all standard sizes as are regularly required for multiple V-drives. The belts are said to be matched so that each will carry its equal share of the load.

◆

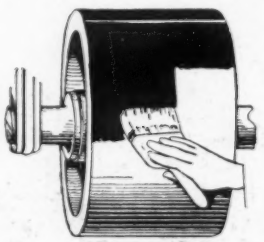
New De-ion Enclosed Circuit Breaker

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has announced a new De-ion enclosed circuit breaker for the protection of all types of light and power circuits. This new type AB-1 breaker is made in four frame sizes, including ratings from 15 to 600 amperes in steps corresponding to commercial wire sizes. The breakers have silver contacts operated by a toggle mechanism to provide a quick make or break action, bimetal thermal elements to prevent tripping due to harmless overloads, and rust and corrosion resisting metal parts. The steel case is water and dust tight.

◆

Prevents Pulley Slippage

Warren Pulley Cover Company, Danielson, Conn., has made available a compound, which when applied to



pulleys is said to prevent belt slippage. It is also applicable to V-belt sheaves. The compound is applied with a brush, goes on as easily as paint, and dries quickly, giving an adhesive but not sticky surface, permitting the belt to run slack and easy. It is said to last from one to two years.

◆

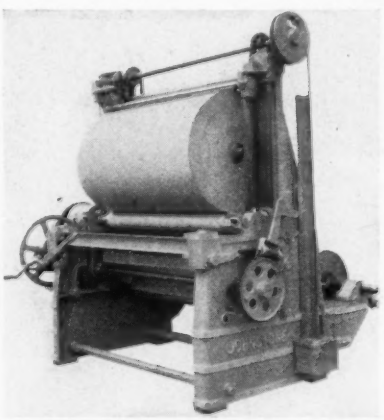
Twist-Setter Has Micarta Instead of Metal Parts

Seydel-Woolley & Company, Atlanta, Ga., manufacturers of textile chemicals and the Twist-Setter for setting the twist in filling yarn, have announced that the improved model of the machine has parts constructed of Micarta instead of metal. Micarta is a Westinghouse product made of about 90 per cent cotton, coated with a plastic material and subjected to high pressure and temperature to give it strength. It is inert to weak acids and alkalies. Sheets of Micarta will be used in the Twist-Setter for constructing the hood, sprockets and aprons. The product, being lighter than metal, will offer advantages in giving a lighter apron, which should give longer life. The machine has also been shortened to conserve space and to lighten the apron. The main features of the Twist-Setter have been retained.

◆

New Slitter and Rewinder

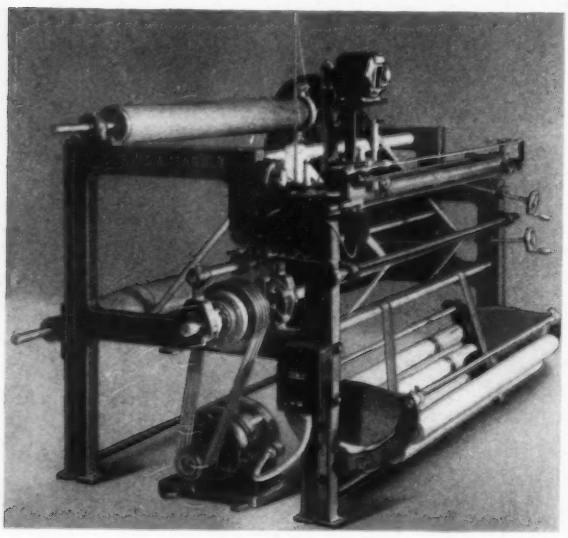
Johnstone Engineering & Machine Company, Downingtown, Pa., has announced new 12 and 14 score cut slitters and rewinders, completely modern in every detail. Features of the new machines are: ball or roller bearings, tool steel slitter lever for strength



against breakage, sealed slitters to protect against excessive wear, underpoint springs on slitter levers for stability, boomerang pressure release lever, which always returns to former position, dual clutch control, combining brake with shifter, and one handed pressure roll elevator to simplify operation. The hinged, split brake straps and mill roll clamp simplify roll changing.

Duplex Sewing and Winding Machine

Curtis & Marble Machine Company, Worcester, Mass., have made available a new heavy, high production model duplex sewing and winding machine, used for supplying automatic shear with large diameter rolls of rayon, where it is thought inadvisable to use a scray on account of the danger in getting wrinkles in the cloth. The new sewing machine will make rolls of cloth as large as 38 inches in diameter. It has a heavy duty clutch and powerful brake. Individual tension devices are used for the winding rolls for regulating the tension on the roll of cloth as it is fed into the shear. Individual clutches are used on each of the two winding rolls, the sewing machine head being driven at a faster speed than has been used previously.



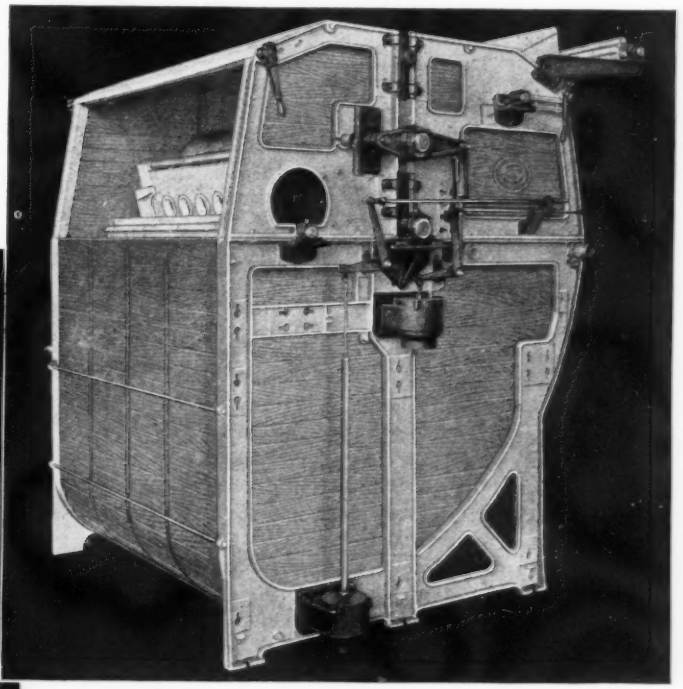
New duplex sewing and winding machine . . .

These are the

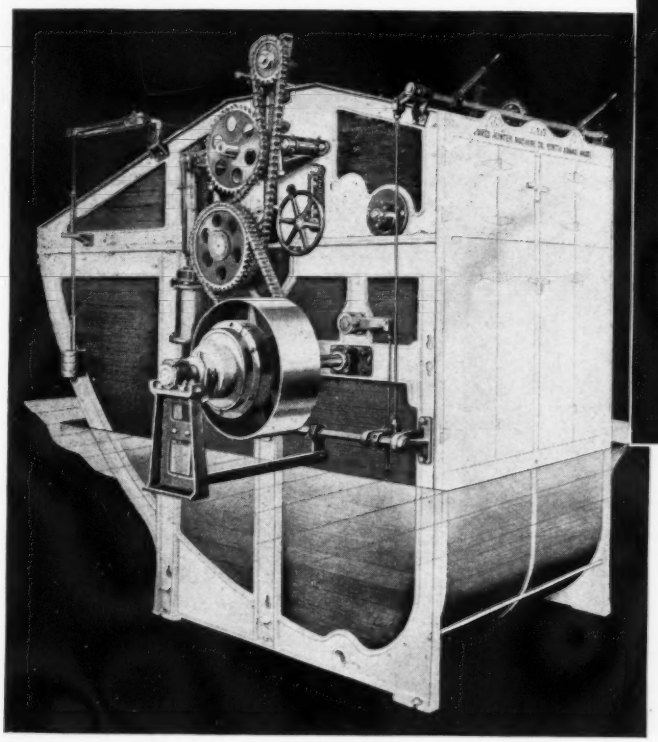
FULLING and WASHING UNITS

for UNIVERSAL work

MODEL
"GK"
WASHER



MODEL No. 26
FULLING MILL



JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

For the mills now producing heavy army fabrics, tough fulling low grade fabrics, or 7-ounce flannels, the two units pictured above—the Hunter No. 26 Stainless Steel Fulling Mill and GK Cloth Washer—represent not only the most modern equipment obtainable, but machines to do the scouring and fulling job quicker and easier.

For example, the No. 26 Mill is equipped with hydraulic tension for top roll, stainless steel linings, guides, stop motion, and crimping boxes, and will give you twice to four times the capacity of your older Mills with far more uniform results. In fact, production is often increased to a point where twice the load is handled in two-thirds or even half the usual time.

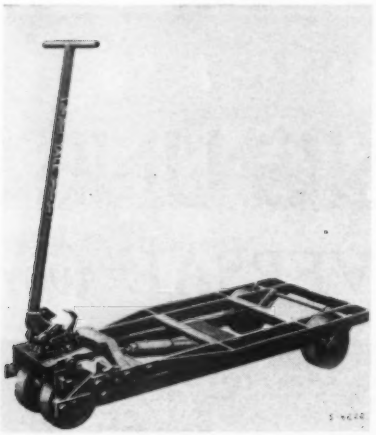
The GK Washer is the most modern available rope type scourer. Equipped with new principle of applying water to the goods, new type suds box and gates, rubber rolls, and roller bearings throughout, it will cut your overall scouring and rinsing time by as much as twenty minutes.

Full details on both these modern machines are completely described in up-to-date bulletins, and it will not obligate you to write for a copy. Send for them today.

JAMES HUNTER MACHINE COMPANY

SINCE 1847 NORTH ADAMS, MASSACHUSETTS

Western Representative: E. G. Paules, 343 Bendix Building, Los Angeles, California



● Another of the improved hand lift trucks being supplied by Yale & Towne Manufacturing Company (see March issue). The one shown here is the "red streak" and features simplified and easier single stroke lift. The lift mechanism has fewer moving parts and incorporates safety features to prevent tripping and flying handle. To prevent cornering of this truck in cramped quarters, it has 90-degree lift and full 180-degree steer. The wheels are steel with machined-smooth face, mounted on ball bearings sealed against dirt. Available in wide or narrow frame models, each with capacity of 3,500 pounds.

X-2 and XU Model Looms

Draper Corporation, Hopedale, Mass., has announced two new looms, the Models X-2 and XU. The Model X-2 is for the same fabric range as the regular Model X, and has many of the important principles as the Model XD, though the X-2 (in the same width) weighs about 200 pounds more. It has strengthened parts, such as loomsides, breastbeam and girts, plus the application of the 4-bolt hopper stand with wide foot. Shuttle control is provided with a new adjustable check and patented formed shuttle box equipment. Let-off may be a strengthened Roper or Bartlett. All looms are arranged to accommodate 26-inch diameter warp beams.

The Model XU is a duck loom for a range of heavy fabrics up to and including No. 6 hard duck, and is built to run 20 per cent faster than previous duck looms. It has a new arrangement of the take-up. Cloth is kept under proper tension by being pulled over the polished breast beam. Direction of movement of the take-up roll is reversed, permitting the cloth to be wrapped farther around the roll to prevent slipping. Another feature is large drag rolls located above the warp line to accommodate 26-inch diameter warp beams. A heavy depressor bar prevents any lifting strain on the warp stop motion.

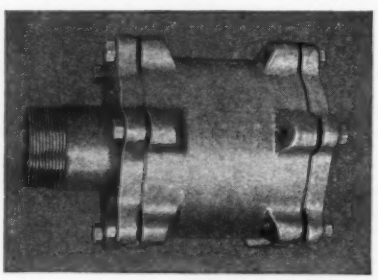
◆

Eastone Red R is New Acetate Dye

Tennessee Eastman Corporation, Kingsport, Tenn., as announced in the February issue of COTTON, has begun the manufacture of dyes for acetate rayon. The company has recently made available an addition to the line of acetate dyes, a new red dye that is resistant to gas and light fading. Eastone Red R produces medium bright shades of red on cellulose acetate materials and may be used for application printing.

Renewable Wearing Plate for Johnson Joint

The Johnson Corporation, Three Rivers, Mich, advise that the larger sizes of the rotary pressure joint are now available with renewable wearing plates. The new design, known as Type R, will have application in textile mills and textile finishing plants. Leaks, caused by dirt and scale accumulating under the sealing ring, may steam cut the casting, and in the new joint the end plate that is subject to wear is made as a separate casting so that it can be refaced easily and inexpensively. Also, the metal parts that



The newly developed "Type R" Johnson rotary pressure joint, showing how wearing plate has been made removable . .

are subject to wear can be furnished of bronze to provide the equivalent of all-bronze construction. The interior construction of the joint has not been changed in any way from the basic design.

◆

Modinal D Paste Eliminates Second Rinsing

E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del., has developed Modinal D Paste, which is said to eliminate the second rinsing process in fulling and scouring piece goods, and to reduce the time necessary for scouring by about 40 minutes. Recommended procedure with the new product is a two-step scouring and rinsing operation after fulling. It applies equally as well to colored and undyed goods, and is said to be helpful for low-grade fabrics containing dirty and reworked wools. The new product is said to reduce blotchy dyeing, insures a cleaner odor, and may be used in colder water in rinsing.

Thread-Board Assembly; Broached Coupling Announced by S-L

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass., in the January 1941 issue of the company's *Bulletin*, describe the new thread-board assembly, redesigned to get a construction which is stronger and easier to repair, and one which will prevent the lappets from sagging, all three of which are said to have been accomplished in the new assembly. Installation of a new lappet only requires knocking out the hollow rivets and installing the new lappet. The thread guide is fastened to the lappet by a small stove bolt and nut, which passed through the loop of the thread guide through the central hole of the larger washer.

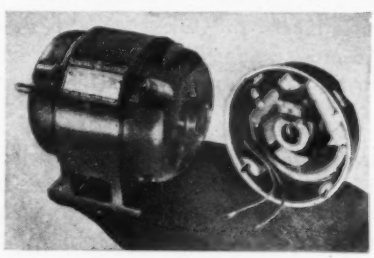
The increasing length of roving frames called for a redesign of the older assemblies, and among such assemblies to receive improvement in design is the coupling used on the bobbin and spindle shaft of roving frames, which is now broached. Four substantial keyways fit four corresponding keys cut by a matching tool on the end shafts which carry the bobbin and spindle gears. In this design all of the torsional strain is taken by the keys so that the two setscrews are required only to keep the ends of the shaft in their proper end-to-end position.

The high-speed slasher, Model C, is also described in this issue of the *Bulletin*. Other features are a description of the No. 3 screen section and the No. 11 dust and waste extractor, and the No. 4 air filter.

◆

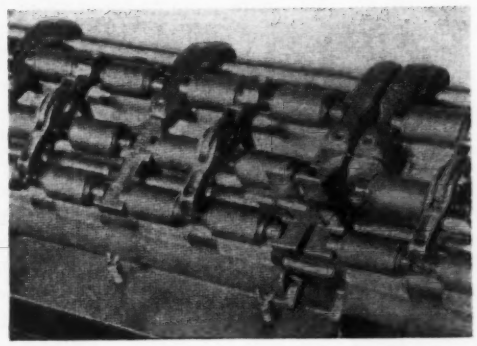
Tri-Clad Capacitor Motor

General Electric Company, Schenectady, N. Y., has announced an extension to its line of new polyphase induction motors, a new Tri-Clad capacitor to meet a large number of varied industrial applications. This motor, like the others in its line, has better mechanical and electrical protection, as well as protection against operating



wear and tear. It may be obtained in either ballbearing or sleeve-bearing construction, and is available in types designed for applications requiring moderate starting torques (for such purposes as fans, blowers, centrifugal pumps) or for high starting torques.

Economical Roll and Saddle Lubrication



7 out of 10 mills use NON-FLUID OIL for top and bottom rolls - and on saddles of SPINNING FRAMES. It stays in bearings and off yarn—does not creep out onto leather and cork cots.

NON-FLUID OIL reduces lubricant and application cost. It outlasts oil 3 to 5 times.

Write today for free testing sample and bulletin, "Lubrication of Textile Machinery"

New York & New Jersey Lubricant Co.

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NON-FLUID OIL
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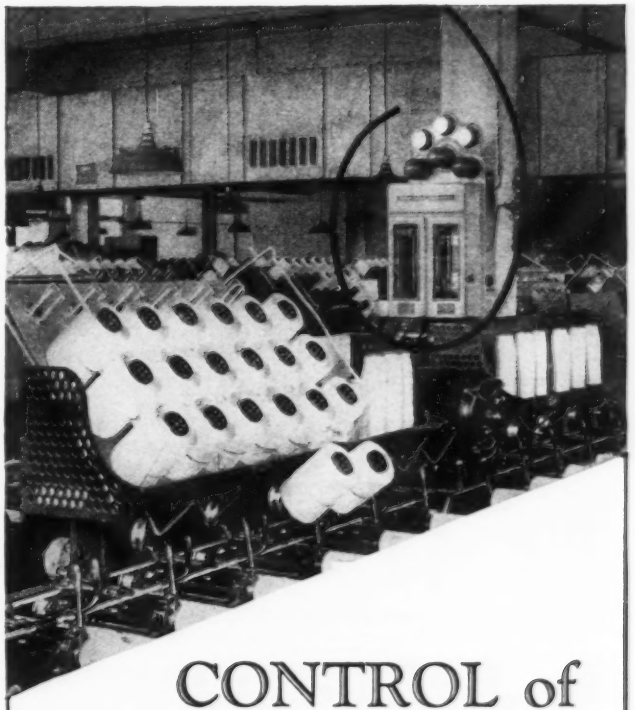
MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month



CONTROL of *Certified* CLIMATE

The sensitive Psychrostat calibrates itself. Self contained thermometers (laboratory type) audit its action for you.

Surprising what a Psychrostat may be hitched up to do. Turns humidifiers on or off. Sprays (in Central Stations) on or off. Fresh air or recirculating dampers on or off.

A two-stage Psychrostat actuates humidifiers sort of double duty; light in winter, heavy in summer. Another stage may regulate temperature—right in the same instrument.

And now a new Psychrostat regulates the speed of Central Station fans. Makes Central Station Air Conditioning less expensive to operate.

In Parks Certified Climate installations you get all the experience that went into the development of this versatile control of Air Conditioning.

Parks-Cramer Company
Certified Climate

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

Air-Operated Switch for Overhead Dispatch System

Cleveland TramRail Division of Cleveland Crane & Engineering Company, Wickliffe, Ohio, has developed a new air-operated switch for use on cab-operated, gravity or automatic dispatch overhead materials handling systems. This enables the rail operator to pre-set the switch at some distance ahead while traveling and thus lose no time. Likewise, indexes on gravity or automatic dispatch carriers may be set to actuate trippers which will cause one or several switches to take the positions desired.

Two New Gulf Ball and Roller Bearing Greases

Gulf Oil Corporation, Gulf Building, Pittsburgh, Pa., has developed two new lines of lubricating greases for ball and roller bearings. *Anti-friction* grease is recommended for heavy duty service, and *Precision* grease is recommended for lighter duty and higher speeds. Both have a high melting point and are specially prepared for greatest resistance to oxidation and separation. Both of these lubricants are available in a wide range of consistencies for any method of application or operating condition.

TRADE AUTOMATIC MARK

Manufacturers for Over Thirty Years

MODERN

Electric Propelled INDUSTRIAL TRUCKS

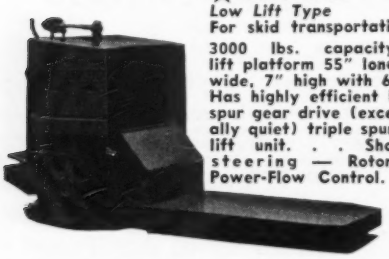
FOR ECONOMICAL MATERIALS HANDLING IN THE TEXTILE INDUSTRY

★ LIFTING

Low Lift Type

For skid transportation

3000 lbs. capacity—has lift platform 55" long, 27" wide, 7" high with 6" lift. Has highly efficient helical spur gear drive (exceptionally quiet) triple spur gear lift unit. . . Shockless steering — Rotor-Brush Power-Flow Control.

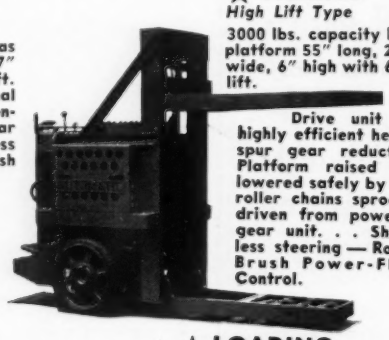


★ TIERING

High Lift Type

3000 lbs. capacity has platform 55" long, 26" wide, 6" high with 60" lift.

Drive unit has highly efficient helical spur gear reduction. Platform raised and lowered safely by two roller chains sprocket driven from powerful gear unit. . . Shockless steering — Rotor-Brush Power-Flow Control.



★ STACKING

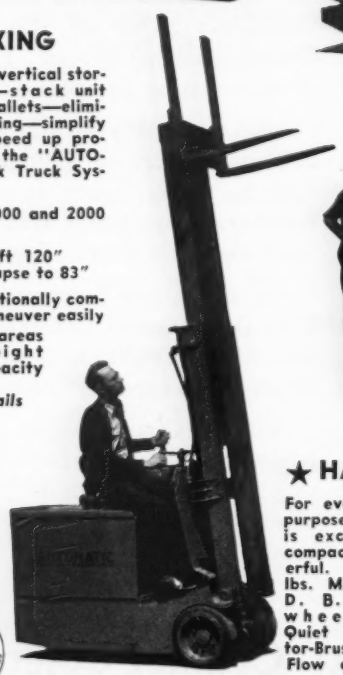
Use your *full* vertical storage space—stack unit loads on pallets—eliminate re-handling—simplify inventory—speed up production—use the "AUTOMATIC" Fork Truck System.

Capacities 1000 and 2000 lbs.

Telescopic Lift 120" Uprights collapse to 83"

Truck is exceptionally compact, will maneuver easily in congested areas also lightweight for min. capacity elevators.

Get Full Details

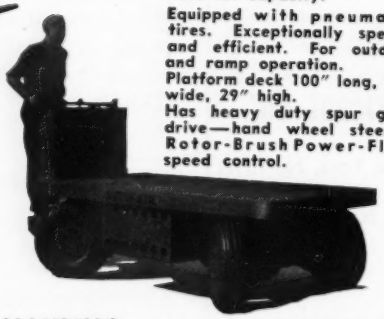


★ LOADING

Platform Type

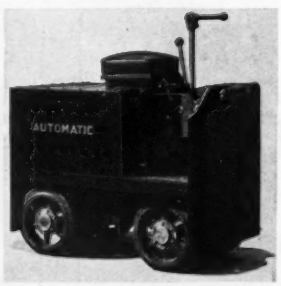
4000 lb. capacity.

Equipped with pneumatic tires. Exceptionally speedy and efficient. For outdoor and ramp operation. Platform deck 100" long, 51" wide, 29" high. Has heavy duty spur gear drive—hand wheel steer—Rotor-Brush Power-Flow speed control.



★ HAULING

For every hauling purpose. Tractor is exceptionally compact and powerful. Has 1000 lbs. Max. hauling D. B. P. Two wheel steer. Quiet drive. Rotor-Brush Power-Flow control.



Listed Under Reexamination Service of UNDERWRITERS' LABORATORIES

AUTOMATIC TRANSPORTATION CO.

67 W. 87th St. Div. of the Yale & Towne Mfg. Co. CHICAGO, ILL.

Roger W. Cutler Awarded Temple Roll Patent

On March 4, U. S. Patent No. 2233995 was issued to Roger W. Cutler of Boston covering improvements in temple roll manufacture. The temple roll covered by the patent has been merchandised by Mr. Cutler for the past year as "Everwear Temple Rolls", primarily in the silk and rayon industry. The roll is manufactured from one of the newer types thermoplastic materials, developed during the past few years.

The patent consists of eight claims, of which the following is typical:

"A temple roll comprising an elastic body, the surface structure of which consists of a tough resilient thermoplastic material selected from the family of compounds consisting of synthetic rubbers and polymerized vinylhalides, ribbed spirally and inert to both oil and acetic acid, said body including in its composition a sufficient proportion of short fiber distributed therethrough so that a multiplicity of said fibers project from the surface of said body, said fibers being held in place solely by said thermoplastic material."

◆

Streamlined Package for Gauges

Ashcroft Gauge Division of Manning, Maxwell & Moore, Bridgeport, Conn., has announced a new streamlined package or housing for the new line of streamlined gauges. The gauges have the same dial sizes as the older type, but have been greatly improved in appearance and reduced in overall size.

◆

Calco Announces New Resin Finish

Calco Chemical Division of American Cyanamid Company, Bound Brook, N. J., has developed a new resin finish, Aerotex 301, a blend of resins. It is recommended for producing a soft and supple hand on spun rayon and spun rayon mixed fabrics. The new finish requires no boiling and the permanency of the finish is said to be unusually good.

◆

Kaumagraph Issues New Identification Facts on Wool Labeling Law

All of the information pertaining to the Wool Labeling Act is included in Identification Facts No. 3, a publication recently issued by Kaumagraph Company, 16-22 E. 34th St., New York City. Every question pertaining to the practical application of this law is answered in the complete compilation. Identification Facts Nos. 1 and 2 deal with Federal Trade Commission rules for rayon and silk.

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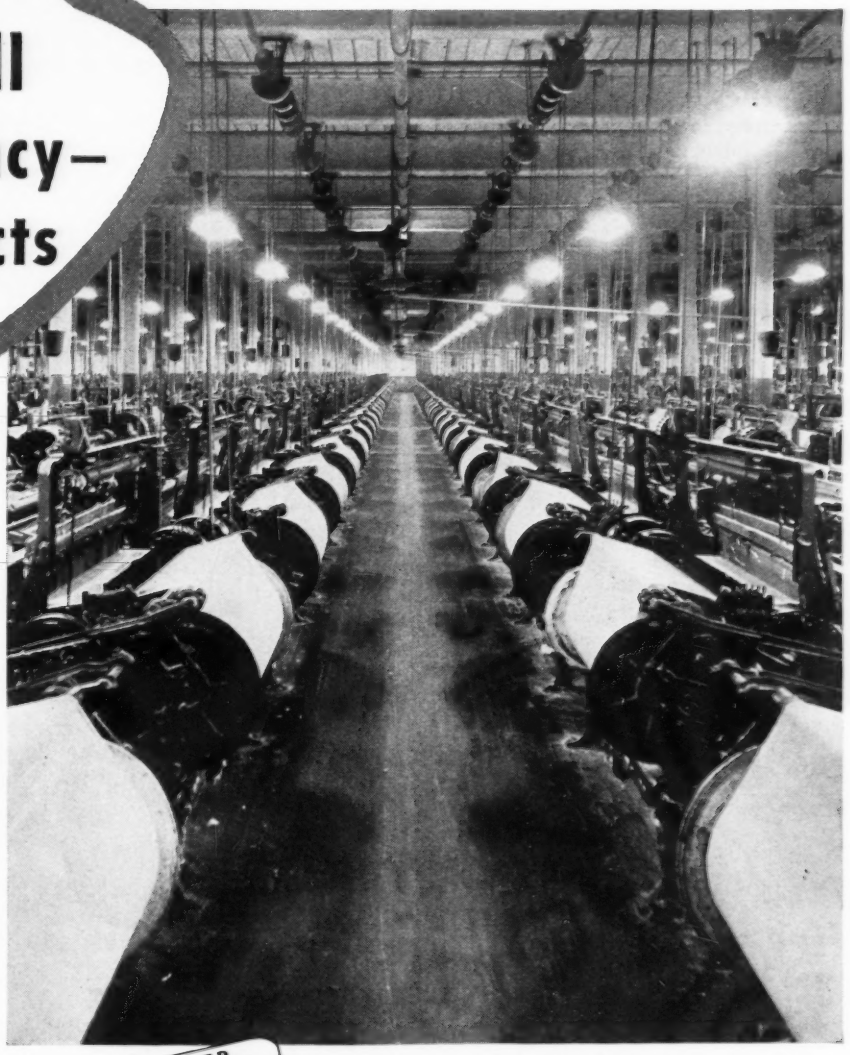
help this Mill step up efficiency— cut down rejects



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Atkinson Speaks on Fibrous Glass Yarns

Games Slayter, vice president in charge of research, and F. W. Atkinson, research engineer of the Owens-Corning Fiberglas Corporation, visited the textile school of North Carolina State College recently and Mr. Atkinson gave the textile students a very interesting lecture on the manufacture of fabrics from glass and illustrated it with a large display of the products which his company is now making.

He explained that as fibrous glass fibers are produced by a mechanical process, the diameters can be controlled and varied in size from 1/7 to 1/50 the size of a human hair. Fibers are considerably longer than cotton or wool fibers and range in length from 8 inches to 18 inches. While glass fibers will stretch only a very small amount in comparison with those of cotton and wool and do not possess the same degree of flexibility, the individual fibers are stronger than either of these materials of the same size. Glass fibers have a tensile strength comparable to figures given for mild steel. A strong fiber which will not stretch or shrink will answer a long felt need in the industrial textile field.

Although the manufacture of fibrous glass yarns is still in the development stage, much progress has been made. Yarns have been experimentally produced as fine as 1½ grains per yard, which corresponds by weight to about 6s cotton.

This yarn has been experimentally woven and knit into cloth without the addition of any other fibers. Due to the nature of the material and the accurately controlled method manufacture of the yarns, fabrics made from fibrous glass possesses many advantages over both organic and inorganic materials, it was said.

It is expected that the yarn type of Fibrous Glass will find a wide usage in the electrical insulation field. These fibers can be wound or applied to electrical conductors in various ways, having excellent electrical and mechanical characteristics, and are able to withstand much higher temperatures than organic fibers. When subjected to the intense heat of an electrical short circuit the glass may melt but will not give off explosive gases. Practical experiments have been made along this line and indicate definite possibilities for extended use in many types of electrical apparatus.

Mr. Atkinson said that due to the stability of fibrous glass it should find a wide variety of chemical applications. One interesting test which, incidentally, is an accelerated weathering test for ordinary glass is to determine the stability in a 5 per cent hydrochloric acid solution. Glass fibers are not attacked by such a test. These fibers also will not absorb the fumes of acids or other chemicals. The foregoing facts indicate a wide variety of possible uses such as filters, gaskets, packing materials, diaphragms, acid proof ropes, nets, etc.

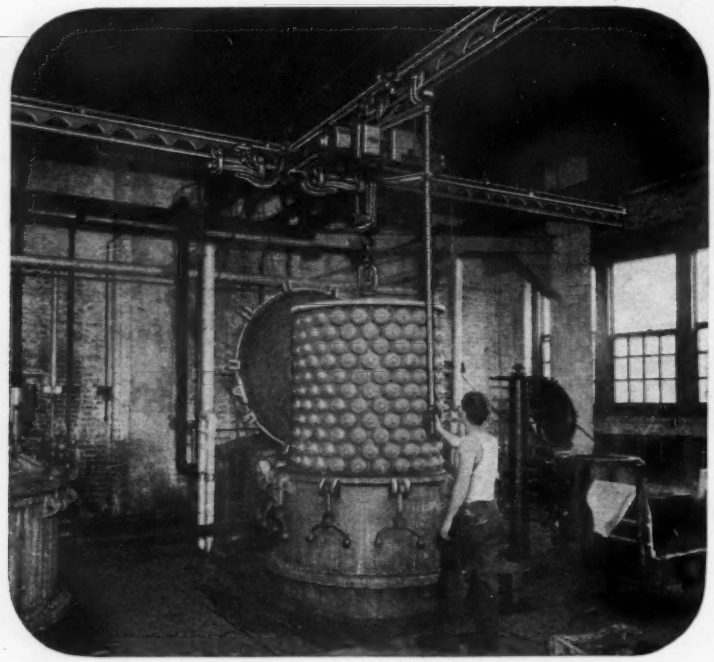
◆

Wool and Silk Markets

According to the *Rayon Organon*, January wool consumption amounted to 46,400,000 pounds scoured basis, divided among the following classes, apparel 36,400,000 pounds and carpet 10,000,000. This compares with 46,600,000 pounds consumed in December and 34,400,000 pounds in January 1940. Wool prices in February remained essentially at the January level, $1.09 and $1.10 per pound.

Net deliveries of silk to American mills in February are estimated by the *Organon* at 25,100 bales. This figure compares with the revised net figure of 24,639 in January and 20,341 bales in February 1940. Silk prices in February averaged $2.57 per pound for the 13-15 denier, 78 per cent seriplane grade as compared with $2.55 per pound for the same grade in January. February closing price was $2.70.

Deliveries of rayon filament yarn to domestic consumers in February amounted to 31,600,000 pounds as compared with 34,300,000 in January and 29,800,000 pounds in February 1940.



CUT OVERHEAD *"Over Head"*

In textile mills a sizeable part of the overhead can be attributed to the cost of moving materials.

With a Cleveland Tramrail Overhead Materials Handling System this item can be lowered considerably because materials are handled faster and easier overhead, less aisle space is required and spoilage reduced.

The Cleveland Tramrail equipment illustrated is in the dye house of a progressive concern. It includes a hand-propelled crane and carrier with motor-operated hoist. The control of the crane and carrier is attached to the rigid arm and is of the push-button type.

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THE CLEVELAND CRANE & ENGINEERING CO
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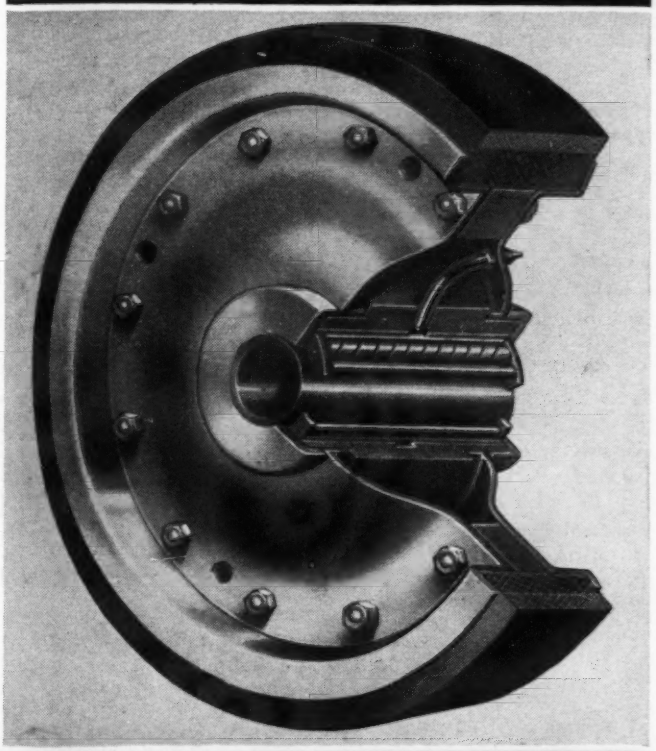
Other products: CLEVELAND CRANES and STEELWELD MACHINERY

DARNELL CASTERS & E-Z ROLL WHEELS



A SAVING AT EVERY TURN

Soft EZ Roll Rubber Tread—is replaceable—will not stretch, nor come loose on wheel.

Features Zerk Lubrication—and Spiral Groove Roller bearing with renewable outer guard.

Hub guards keep dirt out and grease in. Attachable Axle Guard offers extra protection.

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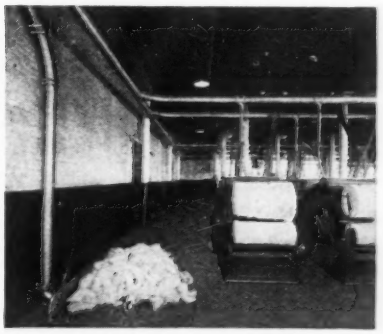


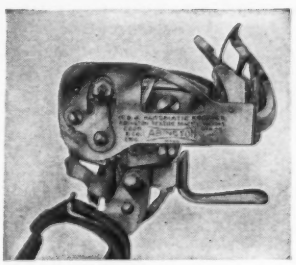
Card strippings and process waste here travel 1,000 feet to Waste House. View at right shows card stripping and Waste Station for collecting flat strips.

Waste House may be near or distant

Vacuum Card Stripping and Waste Collecting

Stripping cards by vacuum reduces down time about 75%, adding around 4% production on cotton; and often giving an increase equal to an extra set of woolen cards. In addition, the Abington Vacuum System is used to great advantage for collecting process waste, delivering waste and strippings to a convenient central location, near or distant. Used in some 500 mills, the system is showing

SAVINGS OF 60% TO 90% ON BOTH COTTON AND WOOL



For tieing weaver's knots in cotton, wool, rayon.

With no other method can you obtain knots so uniform, compact, and short-tailed (tails automatically clipped perfectly even). The Abington Weaver's Knotter makes knots so small as to be acceptable in place of adhesive splice. Absolutely NON-SLIP. Can be adjusted to produce the long tails required for woolen and worsted.

Stripper or Knotter Catalog sent promptly upon request

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Card Strippers — Yarn Dyeing Systems — Weaver's Knotters

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PERSONAL NOTES
About Men You Know

H. GRADY LYON, for some time connected with the Erwin Cotton Mills Company, Durham, N. C., and who more recently has been overseer of carding at the Scottdale (Ga.) Mills, has accepted the position of assistant to T. E. RAHT, vice-president and superintendent of Swift Spinning Mills, Columbus, Ga. Mr. Lyon is a graduate of N. C. State College textile school.

L. M. CALHOUN, Clemson College textile graduate, and formerly connected with Drayton Mills, Spartanburg, S. C., has become associated with Owens-Corning Fiberglas Corporation, Newark, N. J.

A. STANLEY LLEWELLYN, for a number of years manager of the Wateree plant of the Kendall Company, Camden, S. C., has accepted the position of general manager of Inman Mills, Inman, S. C., and Riverdale Mills, Enoree, S. C., a newly created position. JAMES A. CHAPMAN, JR., is president and treasurer of these mills. C. L. JOLLY is superintendent of Inman and W. L. STEELE is manager of Riverdale.

H. ARTHUR NEWTON, formerly general superintendent of the Dover, N. H., plant of Pacific Mills, has become superintendent of the company's Granby, Richland and Capital City plants, located at Columbia, S. C. J. O. CORN continues as superintendent of the Olympia plant, also at Columbia. W. P. HAMRICK is general superintendent of all southern plants.

A. L. BANNISTER, formerly overseer of weaving at the Greenwood (S. C.) Cotton Mills, has been promoted to assistant superintendent, and is succeeded by H. E. SULLIVAN, formerly associated with Borden Mills, Kingsport, Tenn. R. L. HILLEY is night overseer of weaving at Greenwood, succeeding G. C. CULBERSON, who has been transferred to the Ninety-Six (S. C.) Cotton Mills.

W. E. DUNN, for some time assistant superintendent of the Chiquola Manufacturing Company, Honea Path, S. C., has been promoted to superintendent, succeeding G. H. LOLLIS, resigned. Mr. Dunn is the son of E. S. DUNN, vice-president and general superintendent of the Avondale Mills of Alabama. A. B. MARTIN has been appointed assistant superintendent at Chiquola. R. E. CALVERT was promoted from second-hand to overseer of weaving, succeeding R. B. JONES.

R. S. RUTHERFORD has been promoted to general overseer of carding at the Brookside Mills, Knoxville, Tenn.; and ORA LEE ASHE has been made night overseer. M. B. BALDWIN, formerly overseer of spinning at the Modena Mills, Gastonia, N. C., has accepted a similar position at Brookside.

STUART MCRAE has resigned his position with the Bradford Mills, Prattville, Ala., to accept the assistant superintendency of the Bevelle Plant of Avondale Mills of Alabama, Alexander City, Ala. M. D. COLLINS, formerly overseer of weaving at Prattville, now holds the same position at the Plymouth Manufacturing Company, McColl, S. C.

E. W. SEIGLER, who has been superintendent of the Panola and Grendel Mills, Greenwood, S. C., now holds the position of superintendent of weaving at the mills controlled by Abney interests at Greenwood, Anderson, Newry and Belton, S. C.

FRANK I. NEILD, formerly treasurer of the Neild Manufacturing Company, and who has been identified with the New England textile industry for a number of years, has accepted the position of general manager of a cotton mill owned and operated by the government of the Philippine Islands.

J. CRAIG SMITH, vice-president and treasurer of Avondale Mills of Alabama, has been elected president of Currier & Company, yarn selling agents, New York, succeeding the late HERBERT CURRIER. Other officers are R. O. ELLIOTT, Boston, vice-president; and SAMUEL B. TERRY, New York, treasurer.

THOMAS E. SPENCER, Rock Hill, S. C., has become superintendent of the Dacotah Cotton Mills, Lexington, N. C.

DAVID A. PURCELL has been promoted from assistant superintendent to superintendent of the Draper (N. C.) plant of Marshall Field & Company.

ERNST LEVI has been elected president of the Rugby Knitting Mills, Buffalo, N. Y., succeeding his brother, the late SIGFRIED LEVI.

C. A. MEISTER, JR., formerly with McCampbell & Company and at one time with Farr Alpaca Company, has been elected vice-president of the Deep River Manufacturing Company, Randleman, N. C.

Z. W. WHELAND, Chattanooga industrialist, has been elected president of the Yates Bleachery Company, Flintstone, Ga., succeeding the late A. E. YATES, who passed away recently. Mr. Wheland has been a director of the company since its organization in 1920.

G. B. SESSIONS, formerly of Martha Mills, Thomaston, Ga., has accepted the position of assistant superintendent of the Ware Shoals (S. C.) Manufacturing Company.

Obituary

WALTER E. O'HARA, president and treasurer of the Anawan Mills, Fall River, Mass., was killed in an automobile accident February 28.

JOHN FREDERIC HAVEY, for many years manager of the foreign sales department of the Saco-Lowell Shops, Boston, Mass., passed away suddenly the latter part of February.

WILLIAM H. CADWELL, retired agent of the Jackson Mills and of the Nashua Manufacturing Company, passed away after an extended illness.

CHARLES HENRY GEITNER, 74, vice-president of the Ivey Weavers and president of the Highland Cordage Company, Hickory, N. C., passed away recently in Lakeland, Fla.

ALBERT WALKER, 75, president and founder of the Ontario Dyeing Company, Philadelphia, Pa., passed away during February.

EDWARD M. MURRAY, 48, representative of Mathieson Alkali Works, Charlotte, N. C., passed away suddenly in Jacksonville, Fla., on February 22.

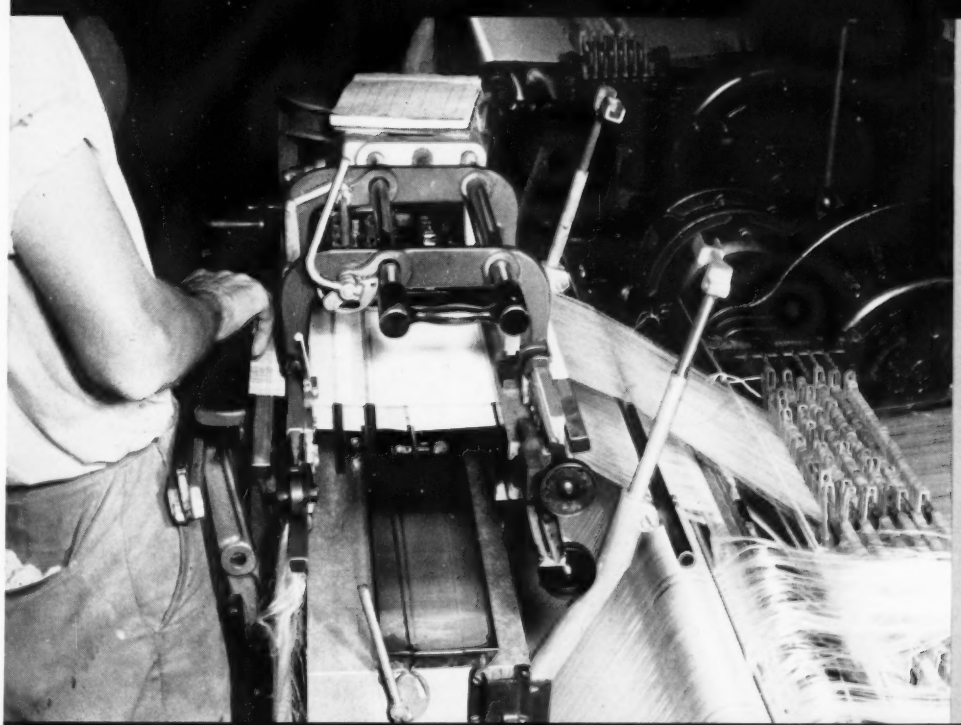
JOHN S. BACHMAN, 63, formerly manager of the Anchor Duck Mills, Rome, Ga., passed away in Tampa, Fla., July 25. Mr. Bachman had retired from active service in 1927 and had been living in Florida for the past two years.

THOMAS MORGAN GARDNER, 64, secretary of the Southern Brighton Mills, Shannon, Ga., passed away in an Atlanta hospital February 28 after a short illness.

For
COTTON
RAYON
or
WOOL

QUICKER WARP REPLENISHMENT

With Barber-Colman PORTABLE Warp Tying Machines



This machine works directly in back of the loom and is easily and quickly portable from one loom to another. Works in alleys as narrow as 12". Ties-in ends uniformly, accurately, and quickly. Makes straighter warps and reduces warp replenishment time to a minimum.

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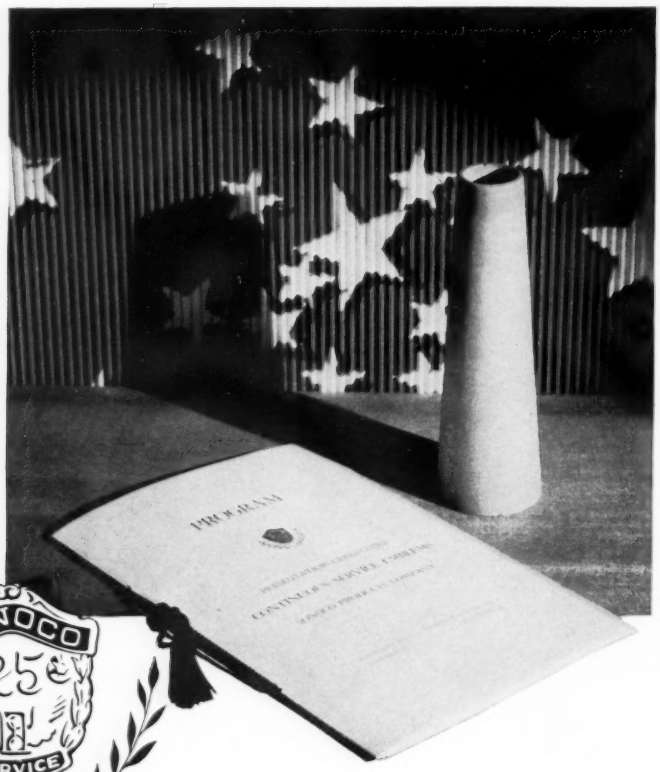

For Faithful Service

ON February first of this year, in a fitting ceremony, Sonoco Products Company presented Continuous Service Emblems to nearly six hundred of their more than one thousand employees—for Faithful Service.

This was recorded evidence of the spirit and intent that prevails within the Sonoco organization, which for more than 40 years has contributed its services faithfully to the textile industry.

KNITTING ARTS EXHIBITION—PHILADELPHIA, APRIL 21 TO 24—BOOTHS 96, 97, 98 AND 99

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SONOCO PRODUCTS COMPANY

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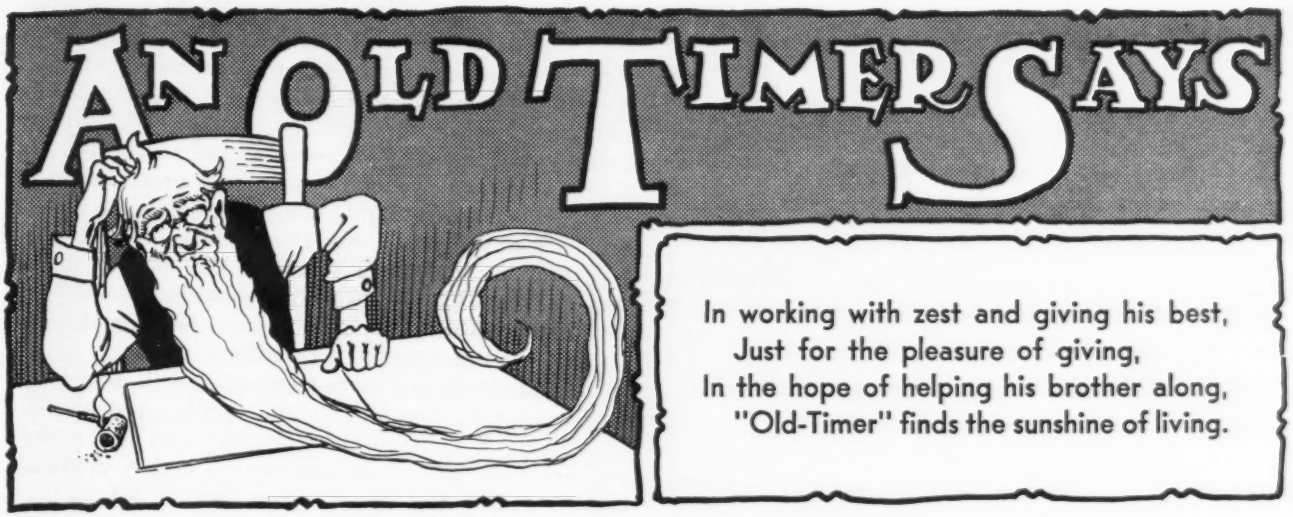
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

What an Opportunity!

(Since this article is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER's part in the conversation, while those in *italics* represent JIM's part.)

The Scene: OLD-TIMER is at JIM'S house on invitation for Sunday dinner. A hearty meal has been enjoyed by all, and the two old cronies—JIM and OLD-TIMER—have repaired to the living room to enjoy their pipes. Not a word has been spoken for some time. They are just sitting there enjoying each other's company. JIM, as usual, is nodding in his easy chair when he hears OLD-TIMER muttering to himself:

What a wonderful opportunity!

Howzat, OLD-TIMER? *What are you talking to yourself about?*

Oh, nothing much, JIM, that is, nothing much to some people but maybe a great deal to others.

Talking in circles again, are you? What do you mean: nothing much to some people and a great deal to other people at the same time?

I mean JIM, that I have never seen such wonderful opportunities in the textile industry as those that loom ahead of us at present. That is, opportunities for the fellow who can see them and nothing much for the fellow who is not alert to conditions that are fast approaching and in fact are with us today.

O. K. Stop sailing around and get down to facts. Tell us something to back up your wonderful foresight about all these opportunities.

Sure, JIM, I can give you facts, plenty of them, and they are red hot; facts that I have encountered so recently that they haven't all been consummated yet, or at least I haven't heard about all of them being closed because it usually takes a few days for two people to agree on the details of one man offering a position and the other man accepting it.

You know, JIM, I left home only last Friday, and I have been visiting around among my friends, and I have come into actual contact with superintendents and mill presidents who are looking for overseers and superintendents to fill *five* jobs and with a whole raft of other superintendents who would like to know of young men whom they could put in line for promotion—and mill presidents are always inquiring about successful superintendents to give larger jobs.

Say, OLD-TIMER, *you are forever harping about young men. Am I correct in saying that you are the fellow who made such a big hullabaloo a few years ago about the man over 40 who could do this or could do that which the young overseer or superintendent could not do on account of experience? Experience—that something which can't be bought with money, I believe is the way you put it. I think I remember one pretty good crack you brought out when you were raving so much about the man over 40 which ran something like this:*

A certain mill president (whom you said you knew but I never did believe it) was looking for a superintendent but turned down all the men who applied that were over 40 years old, and during this time the mill president's daughter was stricken with appendicitis. He rushed her to the hospital and telephoned for Dr. Brown, his family physician for many years. The girl answering the phone explained that Dr. Brown had gone on a fishing trip to Florida but that young Dr. Brown, his son, who was a graduate of a nationally known medical college, was looking after his father's practice and that he knew all about the modern methods of operations, etc., and the mill president replied, "Modern methods, hell. I want a doctor of experience to operate on my daughter."

That will do, JIM, that will do. You sure have opened the door wide open for what I am going to say, and there are at least four people who I feel confident will read this conversation and can back up my statement because they know the facts about this case, and if anyone does not believe it I hope by the time this appears in print that I will have the privilege of giving you the names of the men if necessary. Anyhow, Mr. Smart Alex JIM, here are the facts briefly stated:

I only wish it were ethical for me to give the whole story for that would not only make it more convincing to the reader who does not know either JIM or OLD-TIMER or any of the four men referred to, but it is a good human interest story—a story of a young man

showing his appreciation to the man who helped train him in the complications of being a cotton mill overseer, and the young man went out into the world and made a success while the man who had trained him lost his job as superintendent, and was considered by his brother overseers and superintendents as being through in the mill and unable to get another job as superintendent because he was well past, not 40, but 50 years old.

It is also a story which shows that friendships do not always die even when two men who have been business associates and good friends have not seen each other for years. This does not refer to the relations between the young man mentioned and the older superintendent who trained him, but refers to the friendship between the superintendent mentioned and another man of about his same age who was general manager of the mill where all three men worked.

This manager had in turn trained the superintendent who passed the same training on to this young man who is now a successful general superintendent. Now, the general manager is gone from that mill and as stated, the superintendent lost his job on account of a change in the executive management of the mill. The young man he trained had of course been gone several years before. Here is how and what happened:

The young man is now a successful superintendent in charge of quite a large plant in a chain of mills. His assistant superintendent had just been promoted to the superintendency of another mill in the chain. The young superintendent was inquiring of some men if they knew of a man he could hire. The old former general manager was sitting in the young superintendent's office and heard the conversation. After the visitors had left, the former general manager engaged the young superintendent in conversation about the vacancy in his mill and as the older man asked so many definite questions about the job, the young superintendent finally said, "Why are you so interested; do you want the job?"

"No," replied the older man. "I'm getting along fairly well, but I know of a man who I would like to see have the job and I know and you know he can simply run heck out of that mill, because you once worked for him and at the same time you both worked for me."

"You don't mean Mr. Doe?" asked the young superintendent.

"That is exactly who I mean," replied the older man.

"About how old is Mr. Doe now?"

"I don't give a darn if he is a hundred years old. You know he can run the job because he trained you and I'd like awfully well to see him get the position so he could show his textile friends that he can 'come back'."

"O. K., you call him up and tell him to come to see me."

That's the story, JIM, believe it or not, and OLD-TIMER'S prediction is that you are going to hear of many more cases where so-called "old men" over 40, yes, over 50 year old, are going to be offered good jobs because mill presidents, especially mill presidents having several mills, are beginning to wake up to the fact that they need a few old heads which are filled with that invaluable asset called experience.

As for the opportunities for young men—especially textile graduates—well, Old Man Opportunity is standing there with his arms outstretched, simply begging for them. The deans of the textile schools a few years ago would write to mill presidents and superintendents asking if they would take a textile graduate in their mill, but if my information is correct, that letter writing is now in the opposite direction and mill presidents and superintendents are writing to the deans of textile schools begging them to send their graduates to their mills.

Several years ago there were a few mill presidents and treasurers who would take textile graduates in the mill and the overseers, section men and most everyone else were prejudiced against the textile graduate and instead of helping him, they usually did all they could to discourage the young fellow, with the result that many textile graduates gave up in disgust and left the mills for a job of jerking soda or most anything else they could get. If you will look up a copy of the minutes of the Southern Textile Association along about 1916 or 1917, you will find a talk by one of the officers of the association making a plea for overseers and superintendents to take more interest in the textile graduate because, as this speaker said, we would realize in the near future that we needed technically trained overseers to meet changing conditions.

Yeah, OLD-TIMER, *I was there and a lot of fellows remember that you were the man who made that talk as well as a number of other talks which pointed out to us overseers and superintendents the va'ue of a textile education and that was the reason I took an I. C. S. Course, for which I am very thankful today. You see,* OLD-TIMER, *up to about that time the automatic loom was about the only radical change we had had in textile manufacturing since the revolving flat top cards came out. About two frames in the card room—about eight sides of spinning, and 16 to 20 looms—was an average job for an average operative, and whoops! look at it now. Then, here comes along long-draft—the separation of skilled and unskilled parts of a job, enabling the skilled operatives to take on more machines, and next the synthetic fibers fell on us like an avalanche—all of which has opened up more and more opportunities for the technically trained man, the textile graduate—*

Right you are, JIM, and I am glad to hear one of the old-school like you are, talking like that, therefore I am taking it for granted that you are sold on the textile graduate, too.

Sure I am, OLD-TIMER, *and I'd like to tell all the young men who are graduating and starting out in the mills to use the system which you used in starting the textile graduate in the mill—*

What do you know about my system of starting textile graduates in the mill, JIM? I don't remember ever talking to you about it—

You didn't have to talk to me about it, OLD-TIMER, *wasn't I running the carding when you brought a graduate to me and told me how you wanted me to work him—and say, that boy is overseer of carding in*

(Continued on page 114)

PAGE FENCE

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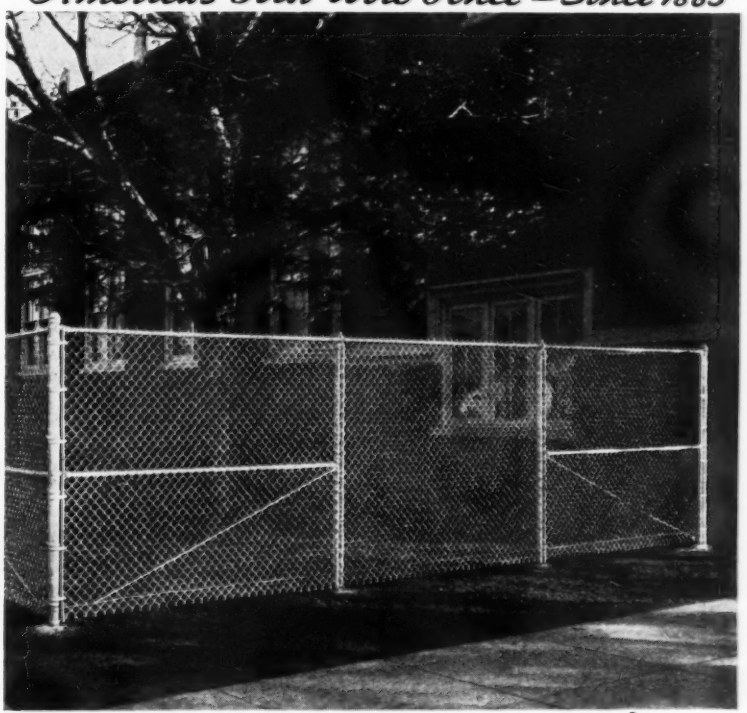

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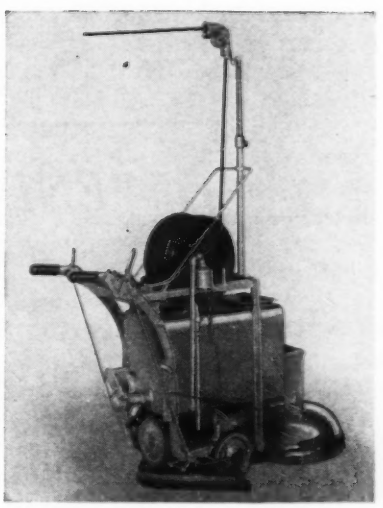

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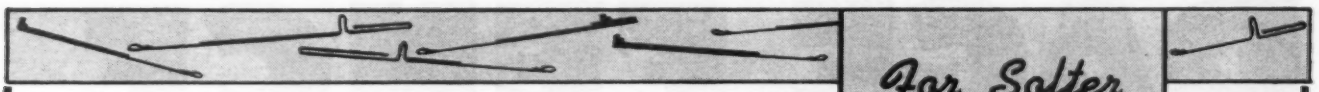

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Slipping Frictions

AN INQUIRY to COTTON asked what mills do to prevent frictions from slipping on looms that are equipped with individual motors. It went on to explain that the frictions seem to get oil in them and it is difficult to keep them up to speed.

The editors made some inquiries on this subject to get a cross-section of practice and the following replies are the result:

Answer No. 1. I have been making some experiments with our own frictions to determine what can be done to bring our looms up to speed. The main causes of friction slippage are too much oil from the friction bearing, which is slung upon the cork; friction not tight enough; and another cause I have found is tightening the frictions too much.

I have recently connected my recording watt meter to a loom and by starting out with the loom slipping from not being tight enough, gradually bringing the tension to the cork, I have found that after passing of certain tension the loom begins to slow down.

The best answer to the method of keeping oil off the friction is to put the oiling under the master mechanic and have him train one man, or as many as necessary, to do nothing but oil and hold that man responsible for excessive or not sufficient oiling.

Answer No. 2. I assume that the mill making inquiry has the old-type loom with the disc friction drive. In the first place, it is possible to reduce considerably the amount of oil that gets on these discs by stopping up the two holes in the disc. The two holes I refer to are those which are in the casting for the purpose of removing the disc by means of a gear puller. It is not necessary that these holes be left open except during the operation of pulling the disc off the shaft.

In spite of all that can be done, it seems that some oil does eventually reach these discs, and the only thing we know to do is to clean them off periodically. Some mills use gasoline for this purpose and simply wipe the grease off with a rag. Others use various kinds of cleaning fluids.

Answer No. 3. Loom motor bearings are generally waste-packed and should not leak oil and it would therefore seem to me that the oil that gets on the friction must be coming from the loom bearings. The mill could probably put felt or canvas collars on the shaft which would prevent this oil from traveling to the friction.

Answer No. 4. I have checked in our weave room and find that we do not have much trouble with frictions slipping. However, on our Model E looms with individual drives, we have some trouble with worn bearings on the crank shaft and these cause some slippage. We have to replace a good many of these bearings when they get worn so much that the adjusting screw will not take up the slack. On our Model X looms we have to keep adjusting the fingers tight in order to prevent slippage.

It was the opinion of one man with whom I discussed this problem, that if the mill is using leather frictions, some of the trouble could be remedied by changing to cork. Leather absorbs oil more readily than cork and causes it to become slick. We use cork on our frictions and this may be one reason we don't have much trouble.

Answer No. 5. We have had this trouble of frictions slipping and found that it was caused by oil getting on the corks. By washing these out with carbon tetrachloride, the oil is removed and the looms thereby run faster.

(Other answers or opinions on this problem are invited.—THE EDITOR.)

WE INVITE our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing.

Smaller Roving Bobbin

EDITOR COTTON:

I have a problem which is puzzling me, and I would appreciate assistance from some of your readers.

I am making 2.15 hank roving for slub filling from carded 1⅛-inch cotton, using a .50 h.r. in the creel doubled. (This is on an 8x4 H. & B. machine.) On the back line of spindles the bobbin of roving is ¼-inch smaller than on the front line of spindles. The back line seems to wind the roving on the bobbin tighter than the front.

I have checked the spindle speed and the speeds are the same. I also have checked the bobbin gears and they are the same. The roving from the backline of spindles weighs an average of 46 grains per 12 yards and the roving on the front line weighs an average of 48 grains for 12 yards.

The .50 h.r. in the creel doubled is creeled in every other bobbin (size bobbin 12x6 slubber). We recently moved the 2.15 h.r. off one H. & B. frame and put it on another, thinking maybe the trouble was in the frame gears some place. The puzzling part comes about when we change this frame on 5.00 h.r., and the difference in the size of roving disappears.

All appearances indicate that the tension on the back line of spindles is tighter than on the front line, causing the smaller bobbin, but I cannot understand why this happens.

CONTRIBUTOR No. 7210

Slack, Baggy Cloth On Model X Looms

EDITOR COTTON:

Your "CONTRIBUTOR No. 7170" complains of slack or baggy cloth about half the roll on the lever end of his Model-X looms, and said that the condition does not show up in the weave shed; this refers to 100x60 broadcloth. His question appeared on page 102 of the January issue.

We would suggest that he check on the cloth roll springs, since he seems to have looked after most everything else. We have seen instances where brand new springs did not give the same tension on each side of the cloth roll. At one time we saw some "outlaw" springs that gave considerable trouble of this type.

If we experienced the trouble with slack selvages and checking the loom did not give any results, we would go back to the slasher. If the slasher is out of line, especially rolls that work on the stock when it is wet, he would have trouble in his weave room.

From some recent rayon experience, we would suggest checking the warper and especially the warper beams and the slasher creels.

This all sounds routine, but we have found that some of our most aggravating troubles have proved to be very simple things.

CONTRIBUTOR No. 7175

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EDITOR COTTON:

Answering "CONTRIBUTOR No. 7170" with reference to the problem of slack-sided cloth, will say that this problem of preventing slack-sided cloth when looms are as jam-up, as this contributor says his are, is a very irritating one. The power he speaks of has nothing to do with slack-sided cloth. If the X-Model mentioned has a traverse spring that operates each rack of gears independently of the other rack he is in a rough row of stumps until he changes them to a single traverse spring that operates both racks of gears together. Some early X-Models were built with this double traverse spring.

A sheet of No. 2 sand-paper tacked around the cloth tube near the selvages will help prevent slippage.

Assuming that all mechanical parts of the take-up and traverse motion are in proper condition, we will have to check into the human element that enters into the job of doffing cloth rolls.

First, slack-sided cloth is caused by telescoped rolls of cloth. This can be caused by several things. Getting down to brass tacks, I would suggest that he have the loom number, the date and the cloth man's initials put on each end of the roll of cloth; this is done by the man who doffs the roll of cloth. Then have the stitcher operator to take down on a card the number and date and initials of all the rolls that are slack-sided; then record these, with all the data, and he will find repeats on certain looms which indicate loom trouble; also repeats on certain cloth men which indicate poor start-off on wind-up; also, repeats on certain days that may be dry and windy that will cause the cloth to be wound loose and to slip.

CONTRIBUTOR No. 7179

EDITOR COTTON:

I have read with interest the inquiry of "CONTRIBUTOR No. 7170" relative to slack or baggy cloth on the Model X loom.

It so happens that we had almost an identical situation in our plant sometime ago, and though it may sound funny, the excellent mechanical condition of the loom may be partially the cause of this trouble.

At our plant the fabric in question had a twisted cord (2-ply) selvage made from the same yarn as the body of the cloth. In addition, these cords were reeded the same to the dent as the body of the cloth, and occasionally an extra cord was added in a dent. As you can see, this produced a selvage that was at least twice as heavy as the body of the cloth. This is, however, common practice, I understand.

Now, with a loom in good shape the cloth roll produced was practically perfect. The ends were not tapered and each selvage was rolled round and wound exactly centered on itself. This did not produce a noticeable effect on a small roll of cloth, but when the rolls began to build up to some size these two selvages got bigger twice as fast as the body of the cloth until the roll assumed the shape of a stove pipe with ridges or wheels on each end.

Under these conditions the take-up of the selvage was the same as the two "wheels" which had been built up on each end of the roll. The body of the roll was being taken up in much the smaller diameter roll produced by the normal mass of yarn. In this way, the natural result was to stretch the selvages, since an excessive proportion of the strain was carried on them, and leave about the normal amount of stretch in the body of the cloth.

When the cloth was unrolled without tension, the body contracted to the predetermined length, which gave too much selvage with the usual slack or bag.

Looms which are not set up quite as accurately and do not make quite as perfect a roll, will not produce these "wheels". The bagging is less noticeable here.

To overcome this condition the mass of the selvage has to be reduced to about the same as that of the body of the cloth. This is done in several ways, such as reeding fewer ends per dent, using cords that are not twisted, or twisting cords from finer numbers than used in the body of the cloth, or combinations of these principles.

CONTRIBUTOR No. 7180

◆

EDITOR COTTON:

This has reference to the inquiry of "CONTRIBUTOR No. 7170" who is having trouble on his Model X looms with slack or baggy cloth.

Besides making faulty cloth, the fabric that is slack or baggy also gives trouble on a shearing machine, and I might pass along what has been done to overcome the bagginess.

We believe it is caused by the cloth roll, which is held in place by two springs. It is almost impossible to tell until the loom is in operation whether these two springs have the same tension or not. It is often possible to take two looms that are operating with slack selvages and remove either the weak or strong spring and replace it on the other loom, so that each loom will have two springs of about the same strength, whether they be weak or strong. Several men have told me this is the only way to remedy the situation.

CONTRIBUTOR No. 7194

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Beam Dyeing Problem

Preventing dye liquor from blowing on through beam in beam dyeing operation .

EDITOR COTTON:

This is in answer to the inquiry of "CONTRIBUTOR NO. 7183", who asked a question on page 148 of the February issue of COTTON, relative to blowing beams in beam dyeing operations (dye liquor blows on through the yarn). As is so often the case, this man has not given enough information; he should have given the count of yarn, type of dyeing (whether direct, sulphur, developed, vat or if more than one type what the different types are), the number of ends that the mill is winding on the beams and whether or not the number could be varied, size of the pump, both suction and discharge, horsepower of motor on pump and number of beams dyed at one time by one pump, the inside diameter of dye beam barrel and the make of the dyeing machine. It is very difficult to give anyone information when they furnish very little themselves, but I shall do my best to help this contributor.

Warp Density Control

Now, discussing the subject in a general way, the first point is beaming, which should be uniform and fairly soft, not too soft, however, because beams that are wound too soft often blow quicker than any other kind. There is a warp density control on the market which gives very good results. Your party may have such a control, but if not, I suggest that they investigate this attachment.

The amount of yarn per beam depends on the type of dye and the efficiency of the pump or the number of gallons per minute circulated by the pump. As a general rule, I would say for vat and naphthol colors 150 pounds per beam should be safe and 200 pounds per beam for direct, developed and sulphur colors.

Use of Penetrants

As to the best penetrant to use or whether any is desirable, I would say a good penetrant is desirable and there are a number of good ones on the market and a greater number not so good.

With reference to the pressure which is best to prevent blowing, this depends partly upon the design of the pump. All pumps are designed to pump maximum capacity at a given head, the head equals the pressure multiplied by 2.3. Off hand, I would say pressure of from 30 to 35 pounds should be about right.

Dyeing Procedure

The procedure of dyeing often causes blowing of beams and it is necessary to always be careful to fill up the dyeing machine and start the pump in the beginning with the 4-way valve directing the flow from outside to inside of the beam. The flow should also remain from outside to inside while temperature is being raised and before reversing the liquor it is best to always stop the pump. Before reversing from outside to inside all air should be out of the bath and the circulation should run from outside to inside as much as possible or longer in any case than from the inside.

If the preliminary boil-out can be eliminated by the use of a good penetrant starting the dye at from 100 degrees or not over 120 degrees F., the possibility of blowing will probably be lessened. Practically all mills have had trouble from beams blowing and to have one blow occasionally is to be expected, but the number can be held down if necessary precautions are taken.

CONTRIBUTOR NO. 7185

◆

EDITOR COTTON:

Here are some thoughts in connection with the inquiry of "CONTRIBUTOR NO. 7183" regarding the possible causes and remedies of blowing beams in beam dyeing operations, the weight of yarn to be dyed, etc. His question was on page 148 of the February issue.

Causes of Liquor Blowing on Through Beams

Among the contributory causes of "blown" beams may be listed the following:

A. Ends not laid uniformly on the beam at the warper.
   1. Faulty comb or dents irregularly skipped.
   2. Lack of uniformity on ends in warper creel.

B. Excessive pressure on the dye machine when pumping inside-out.
   1. Lighter beams require correspondingly less pressure.
   2. In general a low pressure (20 to 25 pounds) and a long pumping cycle will help.

C. Sudden changes in temperature in the dyeing (such as following a hot dye-bath with cold water) are thought by some people to cause a violent torque due to the sudden contraction of the yarn.

D. It is a known fact that cold water does not penetrate a warp as readily as hot liquor and therefore frequently the same pump speed will produce a higher and consequently more dangerous pressure.

Now, there are certain practical considerations limiting the net weight of the beam dyed:

A. The size of the cylinder on which the yarn is dyed is a major item.
   1. The wall of yarn to be dyed through is the limiting factor rather than the net pounds of yarn involved.
   2. The larger the empty beam diameter, the thinner will be the wall of yarn to be penetrated, all other things being equal. It is much easier to dye a 250 pound warp wound on an 18-inch drum than it would be were the same warp wound on a 12-inch drum.
   3. In very general terms, it should be practical to dye beams of net yarn weight of from 100 to 250 pounds range.

Certain types of dyeing seem to be more successful in larger packages than with other types of dyeing. Developed colors apparently can be dyed in larger packages than can sulphur colors. Sulphur colors are thicker than developed colors and the warp seems to filter out the color on the first surfaces that the dye comes in contact with, causing the middle of the warp to be lighter in shade than either the outside or the inside.

CONTRIBUTOR NO. 7188

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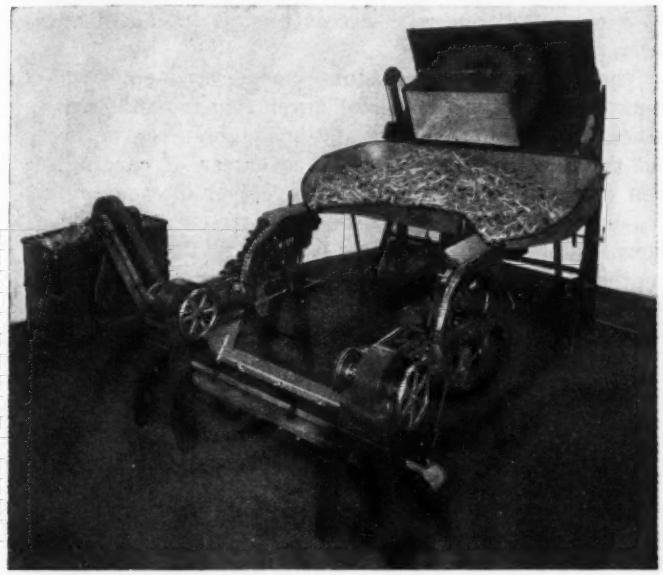

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An Old-Timer Says—

(*Continued from page* 106)

one of the largest mills in the country today, not 200 miles from where he started.

O. K., JIM, go right ahead and tell the boys about the system. Maybe it will help some young man who will start in the mill this year after graduating time.

Well, most mill men and the majority of textile graduates seem to think it is necessary for the graduate to start in at the picker room and work all the way through the mill in order to have practical experience in every department.

The result is that a young man spends a few months in the picking and opening, then a few more months on the cards, a few more months on the drawing and fly frames—next into the spinning and on through every department of the mill. Allowing say only three months for each department, it will take him two or three years to get through the mill and then what has he got? He has spent three years getting a little experience here and a little experience there. Is he ready for promotion? Would you risk him as overseer of spinning when he had only had three months in the spinning room or overseer of weaving when he has only had three months in the weaving? What does he know about running a section in the spinning or a section in the weave room or grinding cards?

Now, your system was to ask the textile graduate first if he had a preference for any one department of the mill; that is, did he like carding, spinning or weaving best. Suppose he said he liked weaving a little better than carding or spinning, you put him in the weave room to stay. He would weave enough to get the fundamentals of what it takes to make a good weaver. He learned what the weaver was up against to get efficiency out of a set of looms with a minimum percentage of seconds. Then he was turned over to the head loom fixer or second hand to learn to fix looms and given a section as soon as he showed his ability to run one. Now, on a section the textile graduate has his foot on the first round of the ladder of promotion. On a section he has a chance to prove his ability to manage people, to show whether he can use his brains in fixing looms in a way to require the least amount of work—in other words, in operating a section he has a chance to show the management whether he is going to make a mill man or not. I would like to ask any mill manager, if he had an opening for an overseer or assistant overseer, whether he would prefer to take a chance on a textile graduate who has had three years in one department and has proven his ability to run a section, whereas the management has had a chance to see if he will work or not, to see if he can get along with the operatives, to see him under actual working conditions for two or three years; or would he prefer to risk one of the textile graduates who has had three months in each department and can't even run a section in any one of them?

Well, that gives the general idea, JIM. Of course there are many more details to the reasoning for the system we used. For example, in talking to the textile graduate to get him to understand why we were putting him in one department to stay—to sell him on the idea, we would ask him to realize how very few practical mill men who are now successful superintendents and managers had ever had experience except in one department; that is, an overseer of weaving would be promoted to superintendent. Now, that overseer of weaving had never been overseer of carding or spinning nor had ever worked in one of these departments, still he is a successful superintendent or manager.

The average textile graduate had never stopped to think about it that way, had never realized that our successful superintendents and managers had never had the experience of being an overseer of carding, then overseer of spinning, then overseer of weaving, etc., but as an overseer in one department they had shown outstanding ability as experts in that department and on being promoted to superintendent that outstanding ability showed up in their management of the other departments.

To show further that such reasoning is practical, we once promoted a textile graduate from a section in the weave room to overseer of carding. This man had proven his ability in the weave room. He was so efficient in his work that his record on a section of looms surpassed the majority of the other section men who had been fixing looms for many years. And to show that this system does work, that man is today manager of a large mill not 100 miles from the mill where he was taken off of a section in the weave room and made overseer of carding.

You see, he had the technical training and all that was necessary was for us to place him in a department and let him stay in that one department long enough to show us whether he was the proper material to make a mill man.

Now you see, JIM, why OLD-TIMER is so pepped up about opportunities for both young and so-called old men in the textile business. Unless we give these things some thought now and then we are liable to get to thinking Old Man Opportunity has taken a vacation, or something. On the contrary it looks now as though we are seeing more opportunities than we have ever seen before and all we fellows in the textile business should keep on the alert to see where we fit into the picture.

Another thought for the textile graduate, JIM, is this: When he has received his diploma and is ready to begin looking for a job he would very likely make a better impression on the executive he goes to see if he approaches that man with a definite proposition in mind. Instead of saying that he wants to start in the mill business because he has just graduated, etc., if he would say to the mill president, "I want to enter the weaving department or carding or spinning because I expect to specialize in that department and want to spend my whole time there"—the mill president is likely to be more impressed with such an applicant because he sees the young man has a definite object in view, and, believe me brother, if the young man does spend all of his time in one department, providing he has it in him to make a mill man, he can show his ability by specializing in one department *sooner* than if he spreads the same time over several departments, and he will thereby gain promotion sooner.

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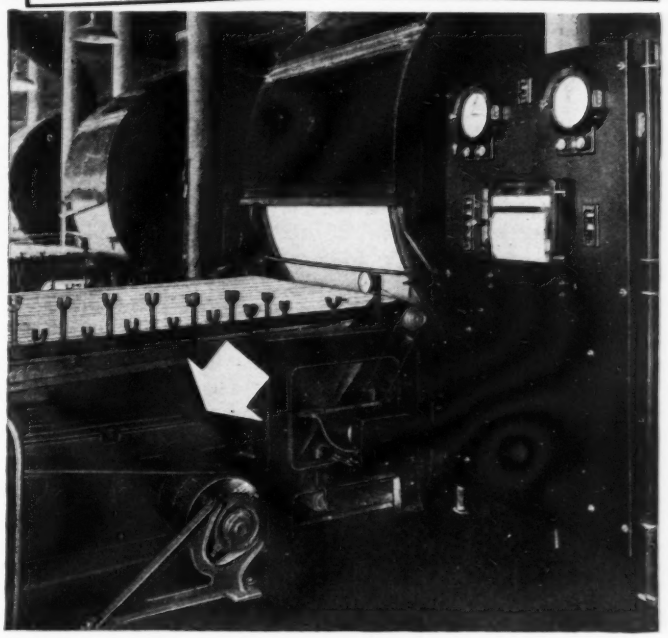

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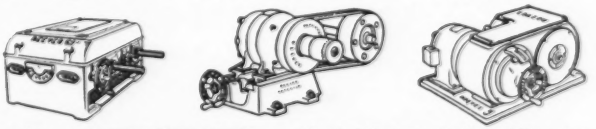
REEVES has aided in the development of many new production methods and controls. Shown here is a new moisture content controller on a cotton yarn slasher (dryer) in a large Maine textile mill. With REEVES automatic speed control this system holds moisture content to a degree of accuracy never before attained, thus greatly increasing production possibilities. Desired moisture value is set by adjusting index on a graphic resistance recorder. When actual moisture exceeds or falls below desired value, the automatic control slows down or speeds up the REEVES, which is connected to main drive shaft of slasher, thus restoring desired volume. Similar installations of REEVES drives and controls, on many different textile machines, will be described on request. Ask for special bulletin just issued.

THE 3 BASIC UNITS IN MODERN REEVES LINE



Left to right: TRANSMISSION provides infinite speed adjustability over wide range, 2:1 to 16:1 inclusive; modern, compact, open and enclosed designs in sizes up to 78 H.P. . . . VARI-SPEED Motor Pulley, simple, direct drive for requirements from fractional to 15 H.P. 3:1 range. MOTODRIVE combines motor, speed varying mechanism and reduction gears; sizes to 10 H.P.; ratios of speed variation, 2:1 through 6:1.

REEVES PULLEY COMPANY, *Dept. T,* COLUMBUS, INDIANA

REEVES Speed Control

"Ten Years of Cotton Textiles"

PREVIOUS production and activity records were smashed by the cotton mills in 1940, according to the annual chart "Ten Years of Cotton Textiles", compiled by the Association of Cotton Textile Merchants of New York.

This compilation, reproduced below, presents a comprehensive picture of the trends and developments in the industry in the period 1931-1940 inclusive. The following interesting facts and interpretations from the figures are abstracted from an analysis of the figures by W. Ray Bell, president:

The increase in spindle activity was 6 per cent above 1939, to the highest since 1929; production of over 9,500,000,000 square yards was an all-time record and cotton consumption (8,057,000 bales) was a new high peak.

Imports for 1940 were about 25 per cent under 1939; exports were up in value but less in yardage. Exports shifted to a greater proportion of unbleached heavy fabrics, with increases in shipments to Canada, South Africa, Netherlands Indies, and the United Kingdom.

With the year's record production, it is not surprising that the reduction in installed machinery, as measured by spindles in place, was the smallest in years. Also, that idle spindleage was low. It is estimated that only about 1,000,000 spindles of existing equipment did not participate in the urgent activity of 1940. The maximum potential of active spindleage is now in the neighborhood of 23,500,000. In 1905, active spindleage was 23,687,000 and cotton consumption was less than 4,500,000 bales. Thus, in 35 years, 14,000,000 spindles have come and gone, and the industry, with about the same number of spindles, has doubled its consumption of cotton. This is in part a tribute to improved efficiency and modern machinery; though the most important factor has been the transition from single to multiple shift operations. Hours per shift have been gradually reduced from 65 to 55 to 40; two shift operation, starting in the first World War, have become typical and almost compulsory for competitive reasons. Now the extension of third shift activity is current practice to an increasing extent.

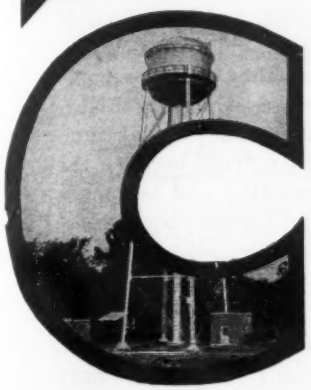
During World War I, the maximum cotton consumption for any calendar year was in 1917: 6,816,000 bales. At that time, active spindles exceeded present equipment by 50 per cent, so it is evident that the industry has accepted and is discharging its responsibilities in providing materials for military, naval and civilian needs. Less than a million bales of last year's consumption went into military and naval supplies, but the demands of the National Defense program, direct and indirect, have been the mainstay and dominating influence in cotton goods markets since early last summer. Although the heaviest impact of this extra commercial demand has fallen upon the specialized divisions of the industry, such as ducks, combed and carded twills and drills, etc., there are but few major divisions that remain untouched by the needs of our armed forces. The recent inauguration of extensive forward purchasing policies has provided a practical remedy for conditions of scarcity which were inevitable in the early stages of the program, and commercial buying policies, in general, have long since moved out of the hand-to-mouth groove.

Aside from strictly defense requirements, governmental purchases were a substantial aid to distribution. Over 40,000,000 square yards of bed tickings were purchased by the Surplus Marketing Administration, as well as 22,500,000 square yards of bed sheeting, and 6,000,000 square yards of print cloth, and over 2,000,000 cotton blankets.

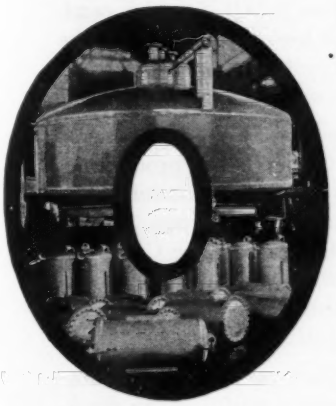
TEN YEARS OF COTTON TEXTILES

Data assembled by The Association of Cotton Textile Merchants of New York from Bureau of the Census reports and information obtained through the courtesy of machinery manufacturers. Cloth production for the non-census or even years has been estimated to correspond to spindle hour activity during the preceding census years.

	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
EQUIPMENT											
Spindles in place at beginning of year	33,608,494	32,326,526	31,442,174	30,938,340	30,889,484	29,253,444	27,700,194	26,704,476	25,986,620	24,943,302	24,532,146
Increase or decrease from preceding year	— 932,992	— 1,281,968	— 884,352	— 503,834	— 48,856	— 1,636,040	— 1,553,250	— 995,718	— 717,856	— 1,043,318	— 411,156
New installation, additions and replacements	205,068	143,908	348,568	329,840	214,874	469,316	772,724	178,280	349,416	414,974	
OPERATION											
Spindles active at any time during year ending July 31st	28,979,646	27,271,938	26,894,860	27,742,462	26,700,946	24,664,428	25,419,110	24,774,004	23,731,050	23,581,938	
Spindles idle during same period	4,628,848	5,054,588	4,547,314	3,195,878	4,188,538	4,589,016	2,281,084	1,930,472	2,255,570	1,357,364	
Average number of active spindles based on twelve monthly reports	25,674,107	23,250,757	24,873,270	25,119,435	23,421,150	23,373,147	24,079,936	22,042,442	22,306,734	22,410,483	
Intermittent spindles (being the difference between average active spindles and those active at some time during year)	3,305,539	4,021,181	2,021,590	2,623,027	3,279,796	1,291,281	1,339,174	2,731,562	1,424,316	1,175,455	
Percentage relation of average active spindles to spindles in place	76.39%	71.92%	79.11%	81.19%	75.82%	79.9%	86.93%	82.54%	85.84%	89.85%	
Spindle hours run	77,793,298,853	70,218,347,911	86,580,232,828	75,711,412,882	76,017,361,934	91,773,252,676	95,591,131,816	75,925,187,178	92,559,108,308	98,183,985,391	
Hours run per average active spindle	3,030	3,020	3,481	3,014	3,246	3,926	3,970	3,444	4,149	4,381	
MARKET											
Production in square yards	6,955,391,000	6,278,222,000	7,866,040,000	6,878,579,000	7,135,276,000	8,613,837,000	9,445,914,000	7,502,168,000	9,043,966,000	9,593,577,000	
Exports in square yards	366,959,000	371,446,000	302,042,000	226,306,000	186,565,000	200,501,000	236,251,000	319,634,000	367,466,000	317,925,000	
Imports in square yards	34,732,000	29,436,000	41,348,000	41,533,000	63,674,000	114,195,000	147,320,000	58,282,000	111,817,000	84,344,000	
Available for domestic consumption	6,623,164,000	5,932,212,000	7,605,346,000	6,693,806,000	7,012,385,000	8,527,531,000	9,356,983,000	7,240,816,000	8,788,317,000	9,319,976,000	
Population at July 1st	124,113,000	124,974,000	125,770,000	126,626,000	127,521,000	128,429,000	129,257,000	130,215,000	131,200,000	132,000,000	
Available for per capita consumption in square yards	53.36	47.47	60.47	52.86	54.99	66.40	72.39	55.61	66.98	70.60	



We Tank You!



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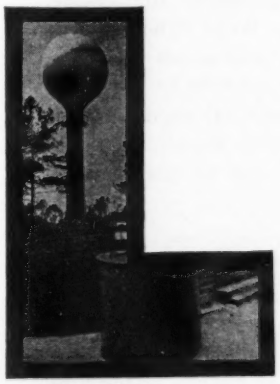

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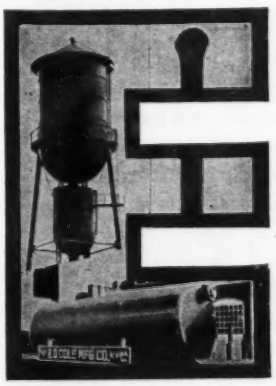
In addition to tanks and towers we manufacture stand pipes, vats, kettles, kiers, engines, boilers, air receivers, heavy pressure vessels, storage bins, and other fabricated products. Designs furnished by us for your individual requirements, or we can produce anything special from your own designs.



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Manufacturers of warp sizes and softeners of all types, for use under any specified conditions:

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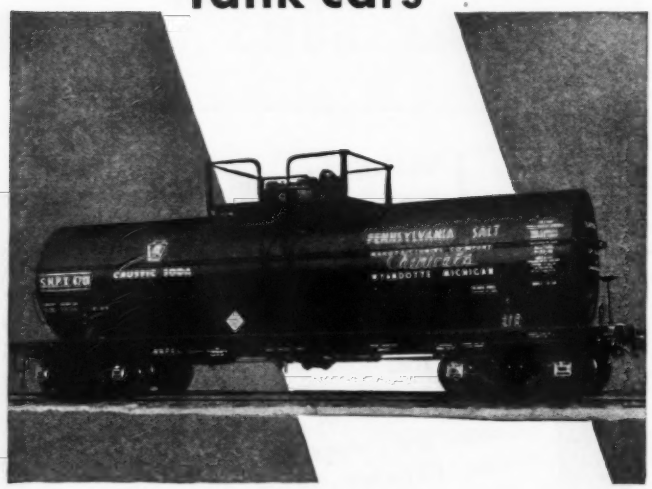
MANUFACTURING N CHEMISTS

You get cleaner caustic— You save handling time— with new Penn Salt tank cars



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CLEANER CAUSTIC SODA—because each new tank car has a protective lining, special draining plates, and caustic resistant valves and interior fittings. Steam heating coils do not contact the caustic soda—eliminating contamination from this source.

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PENNSYLVANIA SALT
MANUFACTURING COMPANY
Chemicals

Between Smokes (Overheard)

GRIND YOUR card flats lightly, with a tight band, and you won't ever have high and low flats. If you already have high and low flats, grind them lightly with a tight band, and in time they will even up.

What makes high and low flats? Original differences in the temper of the wire. The harder tempered wires slow down the grinder drum because the band is slack. They get less grinding and become a little higher than the others. The higher they become in relation to the others, the more they slow down the drum and the worse the condition becomes. Advice to grinders—grind 'em light with a tight band.

THE V-BELT first became generally known as a fan belt for automobiles, but now many uses for it have been found in the textile mills. Another possibility for it—why not a small endless v-belt for the comb drive on cotton cards. Its use here would relieve the grinder of one of his many small problems and leave him more time to tend to his card grinding.

WHAT IS theoretical production? We have heard of mills getting "more than 100 per cent" production, and this claim seems absurd when one understands just what theoretical production is. It is not the figures given in the builders' catalogs because those are statements of what the machines will do under average or better-than-average conditions, and under exceptional conditions it is possible to exceed those

Theoretical production is that production the machine would get if it runs every minute of the working time without a stop. This is nearly impossible, though the card comes close to it. Were it not for the stripping operation, 100 per cent production would be possible on the card, but they do have to be stripped. For speeders 85 per cent of theoretical production is considered good. Spinning has been known to go as high as 98 per cent, but if you get 60 per cent on your warpers, you are doing fine.

THE GREATEST single factor in employee management is the power of example. To be in every way just what you want your employees to be will go a long way toward making them just that. The superintendent, overseer, secondhand—anyone in authority—has just as many bosses as he has people under him. Think of that when you are tempted to do something you know you should not do.

ONCE UPON a time, and this was long ago, the average age of spinners was about 16, but now it is nearer 40, and in some mills even higher. What are we going to do for spinners a few years from now when these capable employees are too old to see how to put up an end. We aren't training new spinners, in this day of wages-and-hours legislation when a spinner must be skilled enough to run a full job or she doesn't get any job. You don't make spinners in a day or even a month. Six months from green hand to skilled spinner is good, and it takes a bright girl to make it in that time. The question is too much for the struggling overseers and secondhands. It is a question of broad general policy for the higher mill executives.

ROSE

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Here is the "cream of the crop" of literature on textile subjects as prepared by COTTON advertisers for aid in mill operation and management. These reference books and catalogs are free for the asking and there is no obligation involved. Read through the list carefully for booklet on the subject or equipment in which you are interested. Then fill in the numbers of those desired on the coupon on the following page and mail it to COTTON.

This service is restricted to those engaged in operation and management of textile industries.

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Continued on Page 120

Continued From Page 119

417. **PRECISION WINDING FOR SILK AND RAYON YARNS**—Describes the new No. 50 Leesona Winder and all attachments that are used for silk hosiery threads and rayon yarns. — UNIVERSAL WINDING CO., Providence, R. I.

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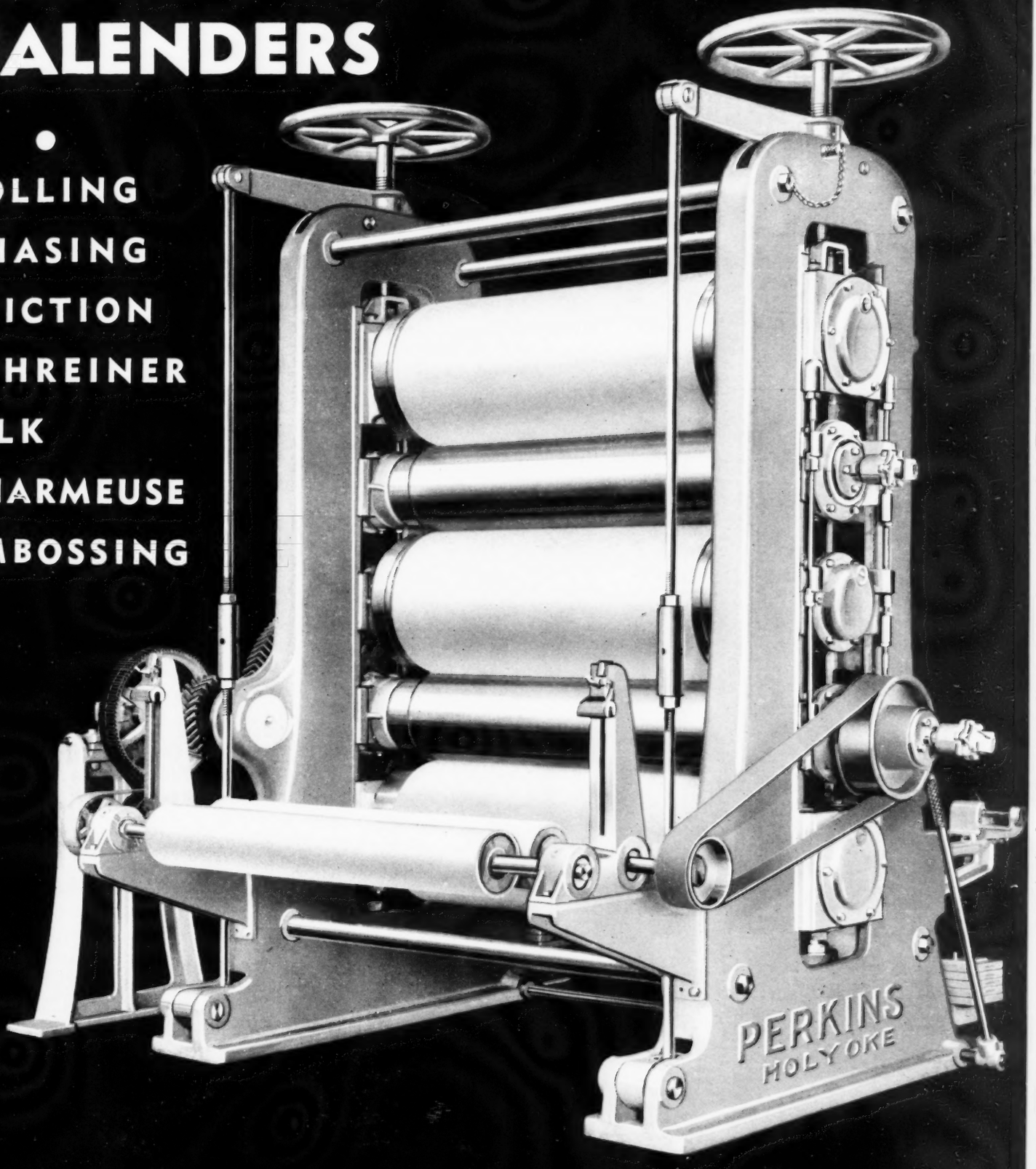

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KNITTING SECTION

Full-Fashioned Management

By Henry Britt

• This begins a series of articles on management in full-fashioned hosiery mills, though many of the comments will pertain to circular management also. The series is written by a prominent executive, who requested that we not disclose his identity, hence the pen name. This first article covers a number of points, and is quite general in nature. Following installments will take up other phases of mill management.

THE ANCIENT proverb, "A wise man will hear, and will increase learning," is an adage to be considered deeply in our complex and kaleidoscopic civilization. Almost daily we read of new methods and materials placed at the disposal of industry, while precedent and records are being shattered continually, making it not only needful but vital to change our policies. The wise mill man will be on the alert for the slightest change in methods that might aid him to keep abreast and to be in the front of his competitors.

Exchange of ideas between mill men was once frowned upon as poor policy, and it was not considered good form to divulge certain things that had been discovered through experience and hard work. The fear of someone getting the advantage was greater than the hope of learning something by such an exchange of thoughts. The present generation, however, has relegated this secrecy to the junk heap and today we find a sincere desire to be frank and open with our ideas, because we have learned that what helps one, helps all.

Art of Supervision

Since this series of discussions treats with hosiery mill management, it is sincerely hoped that from time to time comments might be received on the various phases of management, stating either approval or disapproval of the writer's views.

Broadly speaking, the first requisite of mill management is the art of supervision that might be applied to any industry. Much the same as a good salesman might at one time sell one product and at a later date another, with equally good results, so might we look upon the person whose job it is to manage a hosiery mill. True, a thorough knowledge of the industry is essential, together with the quality of good supervision which can be developed at least to some degree in all persons.

The selection of proper materials that are to be used in the subsequent manufacture of hosiery, depends widely upon the type of goods to be made and upon the merchandising policies of the company. If the mill man to be in charge is fortunate enough to be present at the outset or inception of the organization, his advice as to the type of machinery, construction of the building, etc., will be most helpful to the success of the plant.

Building Construction and Air Conditioning

Factories that have been built only a few years ago unless modernized recently are recognized as being inadequate for present needs, both in area of floor space and in type of construction. Long range planning is essential to prevent outmoding of the building before its value can be realized.

Air conditioning and humidification, together with improved lighting, have done more to change the plans of construction than any other advance in the industry. At one time, not so many years ago, the saw-tooth type of roof construction was considered ideal for the manufacture of hosiery, as it permitted more daylight to enter the knitting room, but today, it is more desirable to shut out this light because of the uniformity that can be attained from artificial illumination. Direct glare of sunshine and the inconsistency of daylight are two unwelcome factors to be eliminated, and with the need of heavy insulation of the roof to prevent condensation of moisture a new type of

building comes into being. Humidification also calls for a new idea in window glass, one that will not radiate heat or cold into the building. Glass brick not only looks modern, but is highly efficient in the diffusion of light, and because of its insulating qualities, makes an ideal window for hosiery knitting rooms.

Modern Lighting

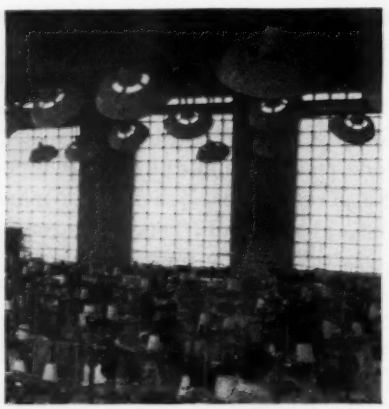
Improved lighting, such as holophane, vaporized mercury and more recently fluorescent, have contributed to the change of construction of hosiery mills. The acceptance of fluorescent lighting has been nothing short of phenomenal and rightly so, because of the quality of light, economy of operation and coolness at which these lights function. Individual switches together with easily accessible panel controls will save current consumption throughout the plant even though the initial cost of installation is higher. A knitting room requires very little general lighting if the knitting machine lights are placed strategically. Fluorescent lights of low wattage placed at right angles to the length of the machines will give a minimum of shadow and dark spots if they are spaced close enough. This same type of light has been used successfully over looper machines and because of its coolness can be placed very close to the operator.

Higher speed and longer section full-fashioned machines require a very strong floor construction. A 200-pound per square foot live load is not too high if multiple floors are contemplated. In the writer's opinion the machines should be placed on concrete and recently experiments have been conducted using felt vibration eliminators under the legs with good results. However, this innovation will require more research. An all-concrete floor may tire the workers so it would be well to have hardwood flooring at points where operatives must walk.

Buildings have not been constructed wide enough to accommodate the extreme length of the new multiple head machines as no one could foresee this trend early enough. Whenever a limit seems to be reached, some new development permits the building of longer machines. If the automatic welt turner proves a success, and there is no reason why it should not, we can look for more sections added to the present machine. Far-sighted planning for this type of equipment is sound business, especially where such a program can be carried out.

Purchasing Machinery and Supplies

In the selection of new machinery the choice of equipment has been narrowed down by world developments. Nevertheless, there are still enough different makes available that a wise selection should be made. The industry is passing through a stage of rapid change, both in methods and materials, and no mill man can be too careful deciding what is best for his organization. The introduction of nylon, for example, is creating new problems, not only in reference to the product itself, but ways and means must be found to manufacture silk hosiery less costly than ever before.



Looper room. Note glass block construction. Arrangement of lamp fixtures prevent glare in operatives' eyes . . . .

The automatic welt turner, even though in its earlier stages, is a direct benefit to volume numbers where the attachment can be operated more times daily. Some mills are using single-unit knitting in one form or other, but there is much to be said for the conventional legger and footer combination to get the most production out of investment of capital. Mills expecting to purchase new equipment should study their specific needs and what they expect to accomplish with the available machinery.

The purchasing of such parts as are required for the maintenance of knitting and auxiliary equipment should be made from the manufacturer of the machines or from reputable manufacturers of supply parts. This will insure against misfits and at the same time lay the responsibility of performance of such parts on the shoulders of responsible manufacturers. It is not uncommon to find machines operating with replacement parts supplied by "cut-rate" companies, and this is often the cause of deep seated trouble.

The 3-thread seamer is helpful in processing nylon. This type of seam will not ravel as quickly as that made by the 2-thread seamer and this is important to nylon yarn because of its inherent smoothness and subsequent ease of raveling. Even in silk hosiery the 3-thread seam has decided advantages, producing a more uniform and better appearing closure to the stocking.

Auxiliary Fixtures

Such items as knitting tables, topping stands, chairs, etc., should be selected for their smoothness of finish to reduce pull thread hazards. Rounded corners with either plastic or leather covered edges are desirable wherever possible and with a minimum number of bolts left exposed to contact the goods in process. The use of plastics in hosiery mill equipment has hardly been touched, but there is every reason to believe that in the future much of this material will find its way in to auxiliary fixtures. Covers of suitable cloth are available for tables and chairs that now present pull thread hazards and these should be selected for their ease of changing and washability. Corrosion resistant metal is another product finding many uses in the hosiery mill and is highly favored for such items as dye machines, hosiery forms and trough equipment of the knitting machines.

Electrical Equipment

The electrical apparatus of hosiery machines has always presented a difficult problem, increasing in recent years with the development of high speed machinery. Because of the highly specialized type of switches required for the rapid and varied changes of speed, many contacts are necessary on the panel board. Electrical equipment has been greatly improved in recent years, one new development being

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TEXTILE MACHINE WORKS, READING, PA.

a new type of mercoid contact. Large motors are required to turn these new multiple head machines over properly at low speeds and the need of new methods of power transmission is apparent. Counterbalance units on the cam shaft will reduce power consumption as well as increase the smoothness of operation and ease of handling.

Lubrication

This brings us to the thought of lubrication. Knitting machine oils should be of high quality because of the large number of reciprocating shafts and small size bearings that require constant lubrication. An oscillating shaft, unlike a revolving one, will easily become sticky or gummy if low quality oils are used. There is not enough movement to keep a film of oil completely around the bearing.

Pressure oiling is an advance in lubrication development, and force feed oilers, especially at the coulier motion will lengthen the life of these bearings. Needle oils should be of such a nature as to adhere rather than run off the needles and points and at the same time produce a polishing effect when the machine is started. There are several good solvents available today for use on the sinkers and needles that will free these parts of any accumulation of deposit from the yarn. These solvents are not injurious to the metal while, on the other hand, help lubricate because of certain ingredients placed there for this purpose.

Knitting Yarns

Selection of knitting yarns depend largely upon individual requirements and are governed by the line of goods to be manufactured. In recent years much 20/22 denier silk has been used in hosiery, not only for such portions as reinforcements but for main yarns as well. The popularity for this denier originated with the growing need of lower cost yarns and it was substituted in places where slight unevenness could not be detected. With the demand increasing yearly for 20/22 denier the cost has fluctuated until there is very little difference between it and 13/15, the standard used in hosiery manufacture. The higher percentages of 20/22 denier silk are adaptable for

Courtesy, Union Special Machine Co.

Three-thread seamers in a large southern full-fashioned hosiery mill . . . . .

use as main yarns and often fill the need of an in-between size in this day of varied and complex styles of hosiery. It is often more advisable to purchase higher percentages of silk for boot yarns, as the better grading obtained more than offsets the initial cost. This holds especially true if the yarn is to be thrown into the higher twists.

A few years ago the trend was toward extreme twists in silk hosiery, but several intervening factors have leveled off this tendency. First of all, manufacturers have learned that it does not pay to knit unbalanced or extremely high twists because of the difficulties encountered in knitting. Waste becomes excessive and the grading of goods is very poor. There is also a limit as to the amount of twist that can be thrown into hosiery yarns without reducing tensile strength and wearability of the stockings. Another factor is the cost involved in throwing high twist yarns and the present market prohibits their use if nothing else would.

Silk yarns should be soaked according to local conditions and today any good throwster can supply a well conditioned yarn suitable to almost all knitting rooms. He is careful enough to first investigate such factors as room humidity, type of trough equipment and even the speed of the machines before prescribing and applying a formula for soaking the yarn. Re-setting of the twists is almost wholly unnecessary today, providing unbalanced or extreme high single turn twist yarns are not used.

Throwsters have improved upon coning and packaging until little difficulty is experienced from this source in the way of end breakage. Nevertheless, the careful mill man will see to it that yarn carrier tubes are changed frequently and for this purpose the interchangeable type carrier tube is ideal. Wool pads upon which the cones are placed and efficient cone holders that do not permit the cones from toppling are important items to reduce end breakage on a knitting machine.

Good Housekeeping

The cleanliness and orderliness of a mill reflects the kind of goods produced and the expenditure of effort require to keep up certain standards of cleanliness will pay dividends. A mill does not have to be new to be clean and neat, but a place for everything and everything in its place is more than just a saying. The people working about a plant become accustomed to looking at certain conditions that exist there and unless someone keeps a vigilant eye upon this phase of management, unsightly conditions can accumulate one by one until the mill no longer looks habitable. Guests and strangers walking into a plant notice these things first and the impression left with them tell a story better than all the explanations given them by the manager. The appearance of a mill represents the efficiency of management just as surely as the selection of materials and supervision of operation represent the man in charge.

Community Relations

COMMUNITY relations of a company are extremely important today. A company must have a good reputation in the community just like an individual. Otherwise, a company may fare badly at the hands of the community.

A company's foremen constitute one of the most important factors in developing favorable community opinion. The treatment that men get from their foremen has much to do with what they say about the company to their friends. Remember, every man under you is influential with some group, large or small, in the community. Are you sending your men out at the end of each day's work with a friendly feeling that will result in their talking favorably to their friends about you and your company?—*Elliott Service Co., Inc.*

"We make our future by the best use of the present"
EDGEWORTH

The new READING 30-Section 51-Gauge Full-Fashioned Knitting Machine produces 104 per cent more volume and 156 per cent more value than ordinary 20-section 42-gauge machines . . . . . *And remember: Money invested in modern machinery serves as insurance for your total investment.*

TEXTILE MACHINE WORKS • READING, PA.

Knitter Hints

Carelessness
(Digging into cone)

Causes
(It's on the way to the floor)

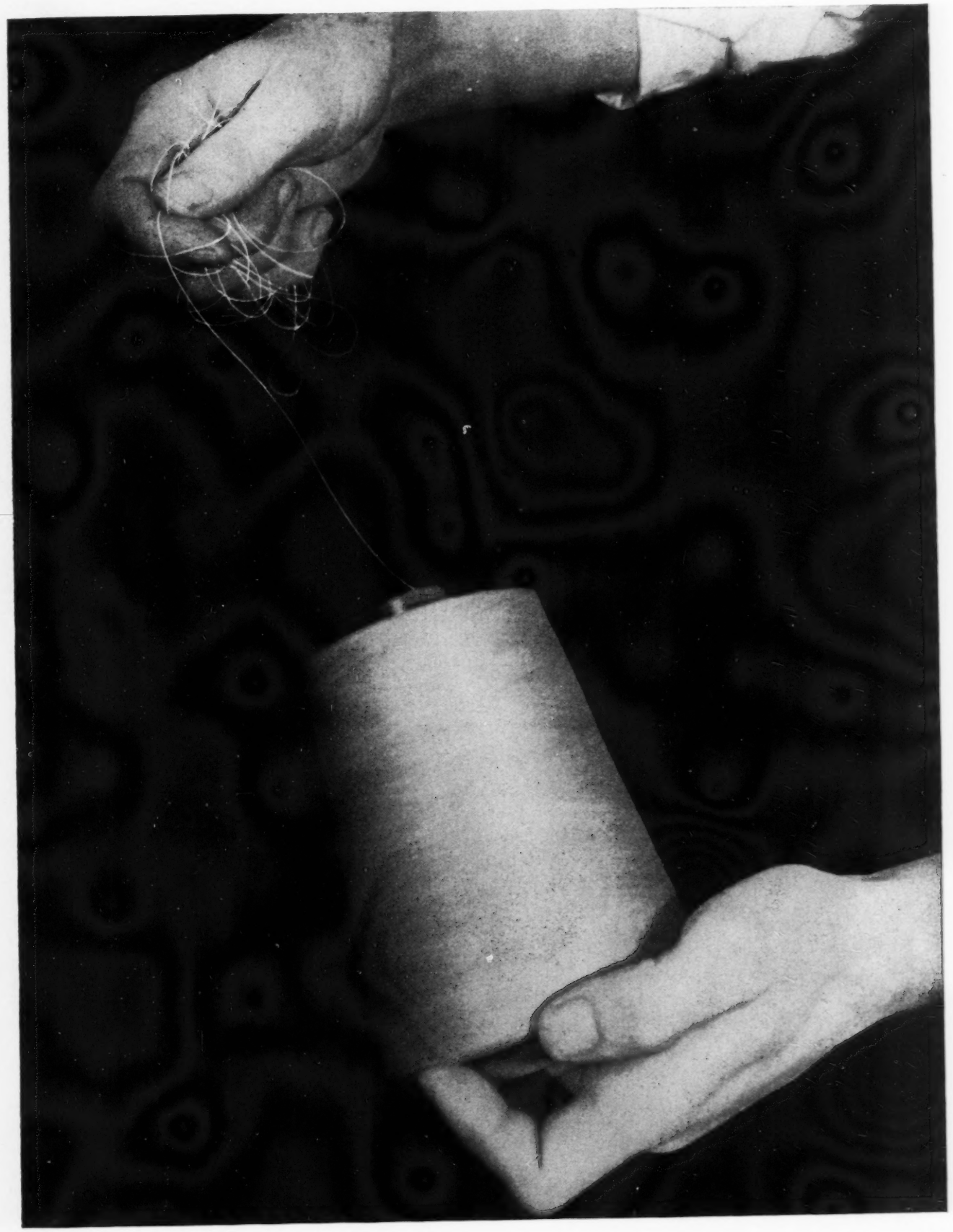
Photos, John C. Fonville of "Cotton"

Waste
(Bruised and Tangled)

Reprints for posting in mill will be furnished without charge if requested by May 1.—The Editors.

It Could Have Been Done

The Right Way



37th Annual Knitting Show

To be Held Four Days, April 21-24

EXECUTIVES in the knitting industry are again making their plans to attend the Knitting Arts Exhibition at Philadelphia, Pa., which this year will be the 37th consecutive show, held annually since it was started in 1906. As usual, the show will be in the Commercial Museum, the dates, April 21-24, Monday through Thursday.

The advance sales of space to exhibitors for the approaching exhibition cover approximately ninety per cent of the amount of space sold in the record-breaking year of 1940. Ten companies will exhibit this year which have not exhibited before. Although several of the companies that have usually had space will not maintain machinery exhibits this year, it is assumed that they will have representatives in the building to greet their old friends.

The Knitting Arts Exhibition is held under the joint auspices of the National Association of Hosiery Manufacturers and the Underwear Institute, and as usual the annual meeting of these two associations will be held during "show week".

The National Association will have its meeting Wednesday, April 23, and the Institute will convene on Thursday, April 24.

Last year, the Exhibition, which had previously run for five days from Monday to Friday inclusive, was limited to the four days of Monday through Thursday. This change was carried out at the suggestion of the majority of exhibitors and met with general approval.

The show will again be held over a four-day period, and two other changes recommended by exhibitors are being put into effect this year. On Monday and Thursday the Exhibition will close at seven p. m., and only on Tuesday and Wednesday will it be open until ten p. m., as heretofore.

A special badge will be given to each exhibitor, showing the individual's name and the name of the company he represents. A similar badge but of another color will be given to the representatives of the industries attending the show. A special registration booth will be set up near the main entrance where the mill representatives can register and receive their badges. The use of identifying badges in the manner indicated will be helpful to exhibitors and mill men.

As in past years, there will be an interesting and instructive display of the activities of the research department and research committee of the National Association of Hosiery Manufacturers.

The exhibition hall will have exhibits of practically all of the materials, supplies and equipment used by hosiery and underwear manufacturers, including knitting, dyeing, drying, throwing, winding, sewing, preboarding and hosiery repair machinery; testing, inspection, building, air conditioning, electrical and office equipment; boxing, packing and labeling materials and devices, yarns of all kinds, chemicals, soaps, oils, and many other mill supplies and allied products.

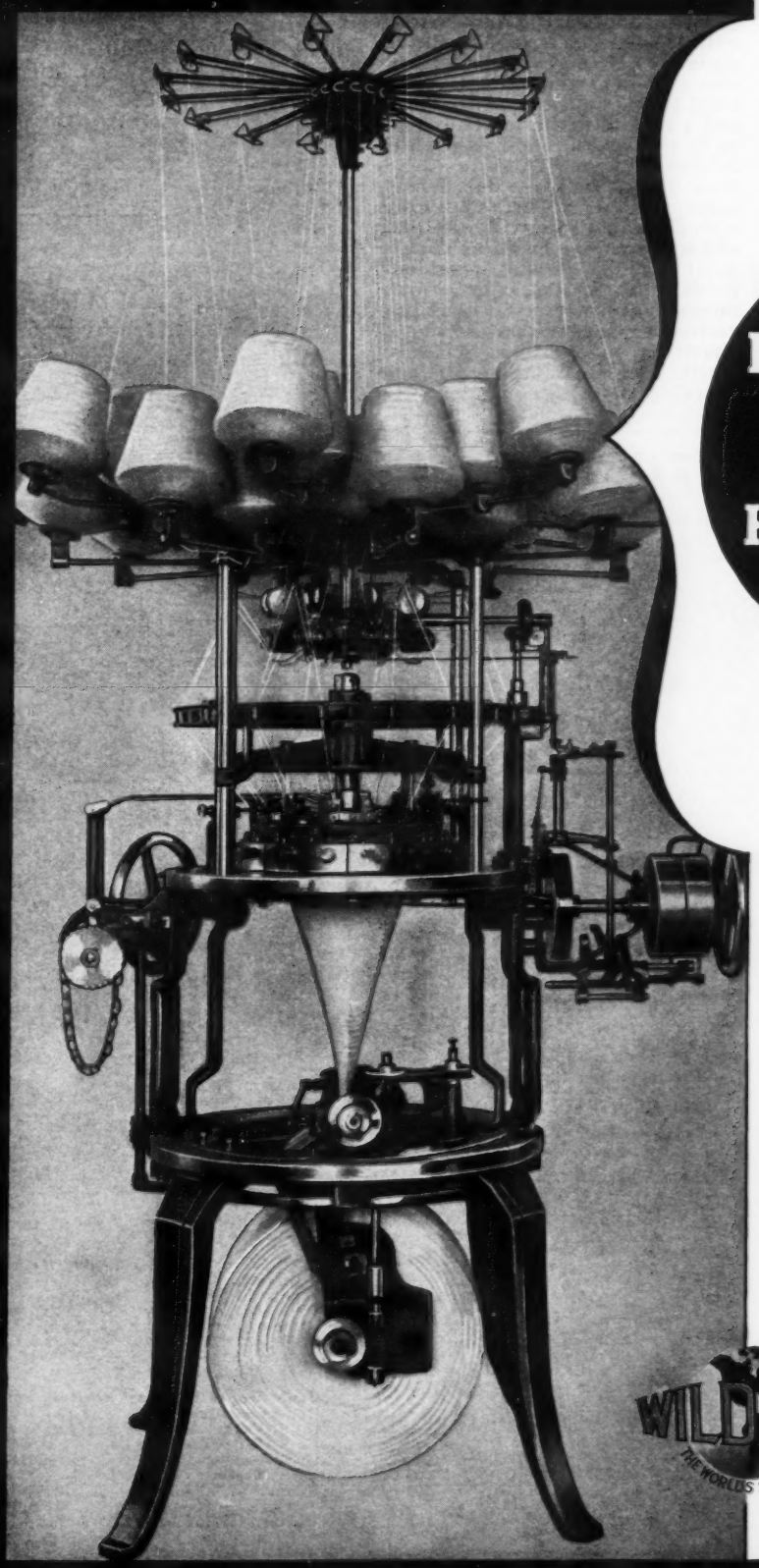
The Exhibition serves at an economical cost to all concerned, the most effective means of annually bringing together those who supply the industry with its needs, and the principal executives of mills

Photos, John C. Fonville, of "Cotton"

Views of the 36th Annual Show in Philadelphia, held in 1940

MULTIPLE FEED RIB MACHINE

. . . WILDMAN



MORE PRODUCTION ? HERE'S YOUR MACHINE!

With America's knitting mills receiving tremendous government orders under the National Defense Program . . . with consumer purchases on the up-swing . . . the problem of increased production becomes a "first consideration." Coupled with this problem is another . . . how to increase production without the danger of over-expansion? One logical answer to both these problems has been found by many mills, in the Wildman Multiple Feed Rib Machine. By replacing obsolete 8-feed machines with this new 16-feed machine they *double* production in the same floor space . . . at an initial investment only 30% higher . . . and with only a 36% increase in power consumption. Added to these major advantages are many others of almost equal importance that are reflected in trouble-free, easier operation and a finer fabric.

WILDMAN
THE WORLD'S STANDARD

Additional information will be mailed to you promptly upon request . . . without obligation, of course.

WILDMAN MANUFACTURING CO.

NORRISTOWN, PA.

who have the buying decisions.

Officers of the National Association of Hosiery Manufacturers are: chairman of the board, J. E. Millis, Adams-Millis Corp., High Point, N. C.; vice-chairman, John Bromley, Quaker Hosiery Company, Philadelphia; and Irving K. Hessberg, Van Raalte Company, Inc., New York City; president, Earl Constantine; treasurer, Nathaniel Judson, Mock, Judson, Voehringer & Co. New York City; secretary, Reuben C. Ball.

Officers of the Underwear Institute are: chairman, Ralph M. Jones, Utica (N.Y.) Knitting Company; first vice-chairman, Grover C. Good, Globe Knitting Works; secodn vice-chairman, Walter W. Moyer, Moyer Underwear Mill; president, Roy A. Cheney; treasurer, Oscar W. Gridley, Utica Knitting Company.

The exhibition, as for many years past, is under the direction of Albert C. Rau.

As usual, the May issue of COTTON will carry a detailed report of the exhibits at the Knitting Arts Exhibition and a report of meetings held during the week.

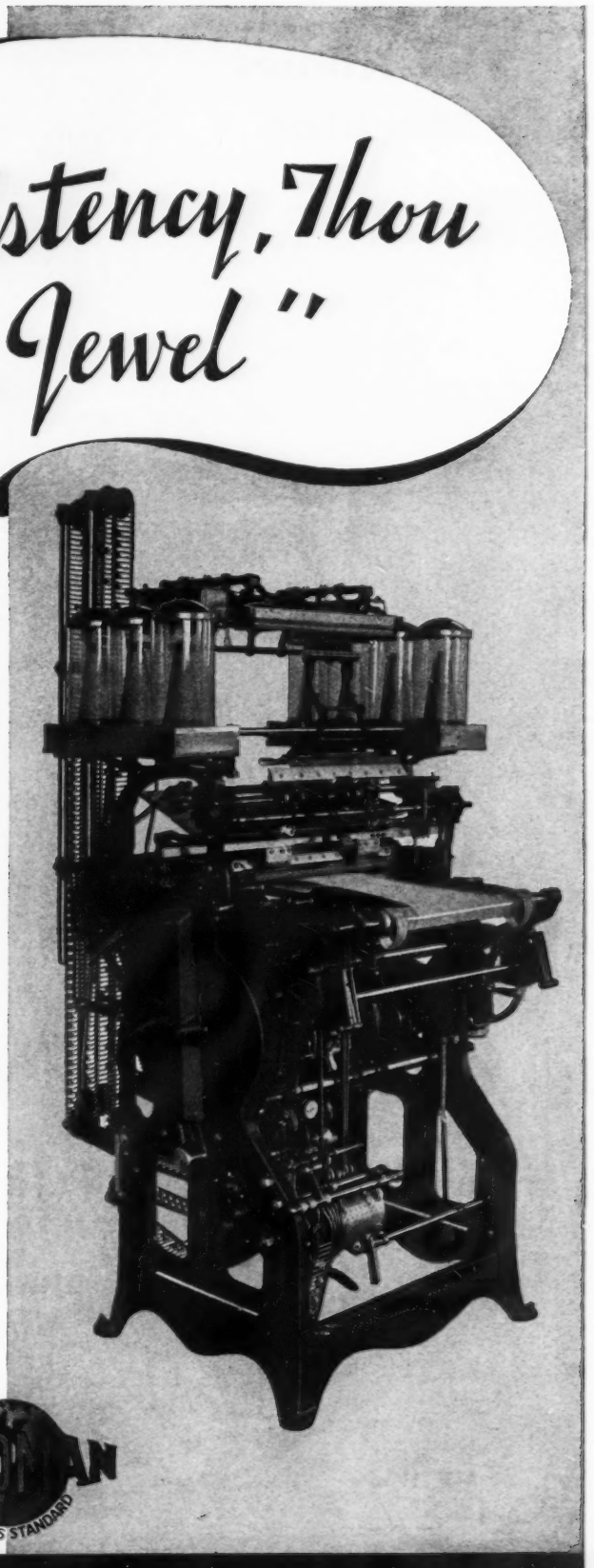
COME TO SEE US

● At the Knitting Arts Exhibition in Philadelphia "Cotton (Serving the Textile Industries)" will occupy Space No. 83. Representatives of the editorial and advertising departments will be on hand throughout the entire show, and a cordial invitation is extended to all those attending the show to visit with us. Those in attendance from the editorial department will be Robert W. Philip, editor; John C. Fonville, knitting editor. From the business department, W. J. Rooke, president; Richard P. Smith, sales promotion manager; John C. Cook, advertising manager; and Arthur C. Shaw, E. A. Robison, A. E. C. Smith, and L. E. Allen, business representatives.

Exhibitors at 37th Annual Knitting Show

Exhibitor	Space Number
A	
Abbott Machine Co.	175
Aberfoyle Mfg. Co.	307-8-321-2-332-3
Adelphia Textile Co.	376
Ainslie Knitting Machine Co.	212
Alka Mfg. & Sales Corp.	364
Allentown Bobbin Works, Inc.	250
Aluminum Company of America	427-428
Amalgamated Chemical Corp.	23-24
American Bemberg Corp.	279-80-289-90
American Enka Corp.	379-80-401-2
American Magnesium Corp.	427-428
American Safety Table Co.	
American Viscose Corp.	309-10-319-320
American Vitos Co., Inc.	355
American Wool & Cotton Reporter	9
American Yarn & Processing Co.	388-9-394-5
Amon, Joseph, Inc.	282
Ammon, Edw. R., Inc.	37
Amsco Packaging Machinery, Inc.	384
Arrow Needle Co.	11
Atlantic Rayon Corp.	252-253
Atwood Machine Co., The	338
B	
Benjamin Electric Co.	421 & 423
Boger & Crawford	273-4-295-6
Boshamer & Co.	40
B. H. Bunn Co.	351
Butterworth, H. W. Sons & Co.	65-66
C	
Cannon Mills, Inc.	390-391
Carron Spinning Co.	435
Celanese Corporation of Am.	275-276-293-294
China Grove Cotton Mills Co.	195-6
Coleman & Co.	383
Chas. Cooper Company	365
COTTON (Serving the Textile Industries)	83
Cotton Yarns, Inc.	392-393
Cross Cotton Mills Co.	199-200
J. D. Cunningham	36
Currier & Co.	353
D	
Davison Publishing Co.	169-170
Dennison Mfg. Co.	442
Diehl Mfg. Company	226-229AA-262-265
Dixie Mercerizing Co.	245 to 248 inc.
The Duffy Silk Co.	396-7
Duplan Silk Corp.	51-52
E. I. duPont de Nemours & Co.	230-1-260-1
E	
John A. Eberly	204-205
Empire State, Inc.	46
Ewing-Thomas Corp.	38-39
F	
Fairchild Publications	80-1-2
W. F. Fancourt & Co.	249
Ernest A. Feustel, Inc.	206
Filatex Corp.	7
J. A. Firsching & Son	359
The J. B. Ford Sales Co.	352
Foster Machine Company	346-7-362-3
Franklin Needle Co.	204-5
Franklin Process Co.	424-5
Friedberger-Aaron Mfg. Co.	21
G	
Gastonia Combed Yarn Corp.	392-3
General Hosiery Motor-Mend Corp.	244
Globe Dye Works Co.	63
Grand Rapids Textile Mchy Co.	159-160-185-6
Grove Silk Company	12-13
Gulf Oil Corp.	43
Gunze Silk Corp.	60
H	
Hampton Company	238 to 241
Oscar Heineman Corp.	344-345
Hellwig Silk Dyeing Co.	281
John W. Hepworth & Co., Inc.	225
Herst Sales Corp.	50
Hoffner Rayon Co.	223-4
Alfred Hoffman, Inc.	342-3-366-7
Hooker & Sanders, Inc.	429
Hosiery Patents, Inc.	158 & 187
Howes Pub. Co.	156-7-188-9
Hygrade Sylvania Corp.	234-5
Hyde-Rakestraw Co.	441
I	
Industrial Dryer Corp.	14-15
Industrial Tape Corp.	45
International Nickel Co., Inc.	16-17
International Salt Co.	161-2
Loyal T. Ives Co.	192-3
J	
Johnston Mills Co.	287-8
Jordan Mills, Inc.	357
K	
Kahn & Feldman, Inc.	214-215
S. Kassow Co.	434
Kaumagraph Co.	102 to 105 inc.
A. Kimball Co.	180
Joseph Klumpp Co.	426
Knit Goods Weekly	156-7-188-9
L	
Laconia Needle Co.	216
W. T. Lane & Bros., Inc.	354
R. K. Laros Silk Co.	58-59
Laurel Soap Mfg. Co.	210-211
Leatex Chemical Co.	41-42
Percy A. Legge	213
Lestershire Spool & Mfg. Co.	209
Karl Lieberknecht, Inc.	232-3-258-9
M	
C. R. McGinnes	356
Markem Machine Company	311-312
Merrow Machine Company	377-378-403
Clarence L. Meyers & Co.	340-1-368-9
The Miller Company	166
Milprint, Inc.	437
L. P. Muller & Co.	317-318
N	
National Association of Hosiery Mfrs. Headquarters	73-74-75
Research Exhibit	415-16-17-438-9-40
National Bundle Tyer	430
National Carbon Co.	49
National Spinning Co.	201
No. American Rayon Corp.	110 to 113 inc.
O	
Onyx Oil & Chemical Co.	217-218
P	
The Pairpoint Corp.	339
Paramount Textile Mchy Co.	266-7-283 to 286
Geo. B. Pfingst, Inc.	370-1
Phila. Metal Drying Form Co.	105AA
Proctor & Schwartz, Inc.	268-9-277-8-291-2
Q	
Quaker Chemical Products Corp.	418-419
R	
Rayon Pub. Corp.	89-90
Reece Button Hole Machine Co.	381-382
Robert Reiner, Inc.	410-11-12-443-44-45
Reliance Elec. & Eng. Co.	432-433
Chas. Reitzes	430
Royersford Needle Works, Inc.	399-400
S	
San-KNIT-ary Textile Mills	44
Sauquoit Silk Mfg. Co.	436
Scholler Bros., Inc.	270-1-2-297-8-9
Sees & Faber Co., Inc.	18-19-20
Shell Oil Co.	413-414
Singer Sewing Machine Co.	226-227-228-229-229AA 262-262AA-263-264-265
Smith Drum & Co.	29-30-31-32
Sonoco Products Co.	96-97-98-99
Southern Knitter	77-78
Southern Mercerizing Co.	221-222
Southern Textile Mchy Co.	374-5-406-7
Standard-Coosa-Thatcher Co.	197-198-219-220
Synthane Corporation	167
T	
Textile World	114 to 117 inc.
G. H. Tennant Company	408
Textile Age	84-85
Textiles-Incorporated	385
Textile Machine Works	300 to 304 inc. 325 to 329 inc.
Textile Trimming & Boarding Machine Co., Inc.	177
Tompkins Bros. Co., Inc.	404-405
Torrington Company	313 to 316 inc.
Tubular Textile Mchy Co.	65-66
E. W. Twitchell, Inc.	168
U	
Underwear & Hosiery Review	69-70-71-82
Underwear Institute	88
U. S. Gutta Percha Paint Co.	251
U. S. Ring Traveler Co.	242-243
U. S. Rubber Co.	106 to 109 inc.
U. S. Testing Co.	420 & 422
Union Special Machine Co.	305-6-323-4-330-1 348-9-360-1-386-7
Universal Winding Co.	148 to 153 inc.
V	
Valdese Mfg. Co.	358
Van Straaten & Havey, Inc.	431
Victor Ring Traveler Co.	208
W	
Westinghouse Elec. & Mfg. Co.	61-62
Whitin Machine Works	142 to 147 inc.
Whiting-Patterson Co.	203
Wm. Whitman Co., Inc.	256-7
Willcox & Gibbs Sewing Machine Co.	334-5-6-7-372-373
Thos. Wolstenholme Sons & Co.	350

"Consistency, Thou art a Jewel"



Perfect matching of leg and foot is assured, because the entire stocking is knitted in one continuous operation . . . on one machine. Every stocking is exactly alike in color and texture. That's the kind of consistent production that many progressive hosiery manufacturers have obtained with this Wildman Single-head, Single-unit Hosiery Machine. And that's the kind of consistent production that pays big dividends to these manufacturers, because it greatly reduces the number of expensive rejects and seconds. There is no product in which uniformity of quality and appearance are worth more to the manufacturer.

Write now for complete information and prices

WILDMAN MFG. CO., Norristown, Pa.

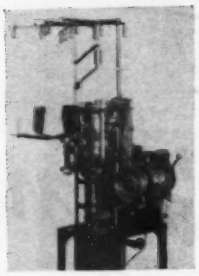
WILDMAN
THE WORLD'S STANDARD

The Modern

WILDMAN SINGLE-HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

The Komet Machine

Article 5



• This is the fifth article in a series on Komet machines, written by a practical mill man who has had much experience on Komets and other circular machines. The series began in the December 1940 issue, and has continued without a break. Plates from the S & W Komet and Links and Links Machine catalog of parts are reproduced, but it would be helpful to the reader if he had this entire catalog before him when reading the articles. Questions on fixing problems pertaining to Komets are being received by the editors, and if there is some special problem that has arisen on Komets in your mill, the author will be glad to offer his opinion as to how it may be corrected.

The Driving Mechanism

THE MECHANISM that we are about to consider makes the Komet run; it is in many respects similar to the driving mechanism on other makes of circular machines in use today. However, if we examine some of the respective parts more closely and trace their functions, we will find quite a number of things wherein the Komet is different, and for this reason very interesting from a mechanical standpoint.

The solution to many of our machine fixing problems on Komets (and other machines as well) lies in the very important element of correct timing or the coordination of movement of various parts, where 1/32-inch in space or a split second in time spell the difference between success or failure. We all have marveled at trapeze artists in a circus do their stuff, which is quite difficult, but perfect timing is the all important factor. So it is with settings on knitting machines.

Speed, centrifugal force, gravity, friction, room and machine temperature are some of the things which have much to do with the timing element as it applies to knitting machine operation. We dare not lose sight of these factors.

Accompanying this article are reproductions of Plates 2, 3, and 4 of the Komet and Links & Links machine catalog of parts. When assembled and timed-up properly these various parts (as shown) transmit the necessary power to turn the machine and make the various devices function at the proper time. As on all other circular hosiery machines, the pattern chain movement controls everything the machine does, directly or indirectly, while each sock is being knitted from start to finish.

The Parts Shown in "Plate 2"

Looking at Plate 2, we see the segment drive gear (101407), segment gear (101403) and the connecting link (101404), which parts supply the means for reciprocating the cylinder during heel and toe knitting; nothing further is required of them. On most machines the rocking action of the segment gear (101403) is utilized to move both the main drum and the pattern chain sprocket wheel by pawl action. Komets are supplied with two independent sources of motion, one, the chain rocking cam (101412) which moves the chain racking lever (101399) and chain racking pawl (101400) (Plate 4), and two, the drum racking cam (101414) which moves the drum racking lever (101-398) and drum racking pawl (102396) also shown on Plate 4.

Much depends on the chain racking device since it has so much to do with the operation of the machine and incidentally it is one of those simple devices which are overlooked and given little or no attention until a machine gets out of time, jams up or makes waste, etc. First of all, make sure that the trip lever plate is set properly; when the chain racking pawl is fully forward, the chain link lug should be brought as near to the trip lever plate as possible without actually touching the plate at the end of a forward stroke of the pawl. The next stroke should put the plate safely up on the front part of the chain link lug. Constant running means a slight amount of wear and therefore readjustment is necessary and important.

The chain rack wheel is supplied with an internal brake shoe which operates on the same principle as the brake shoes on our motor cars. These parts are shown on Plate 6 in the Komet parts catalog. The chain rack wheel must have a reasonable amount of friction on it at all times to keep it under control and assure proper movement. Suitable adjustments and proper friction can be obtained by setting the release lever and stop screw properly—the brake release lever spring will do the rest.

A SWIM SUIT IS ONLY AS GOOD AS ITS SEAMS » »

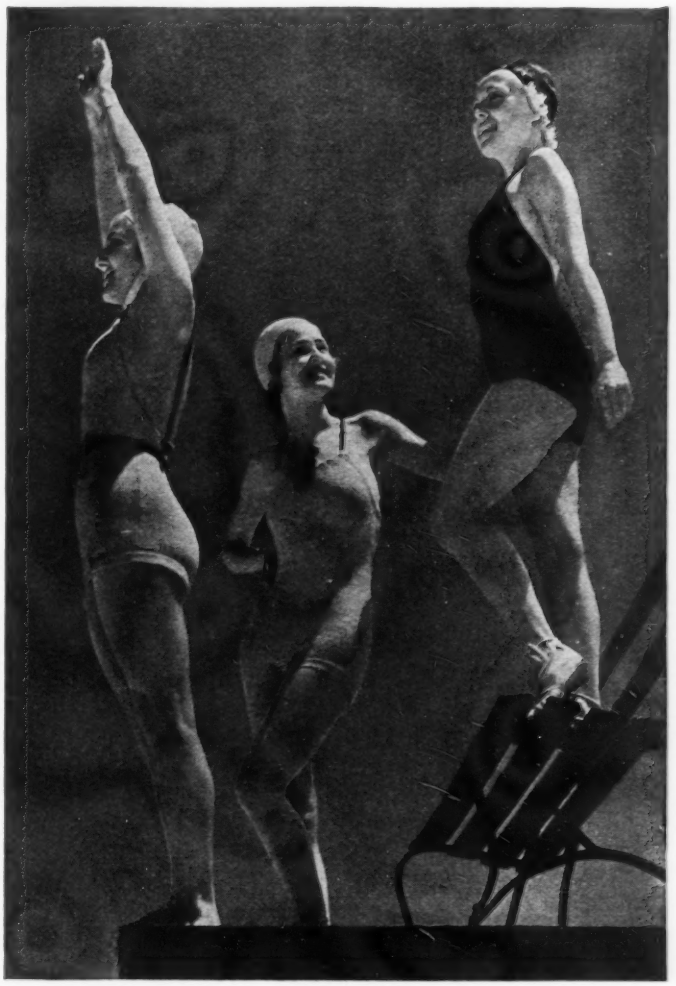
A swim suit is well made only when it is well seamed! Manufacturers of good bathing suits have always realized the difficulty of stitching seams and hems that will last the life of the suit.

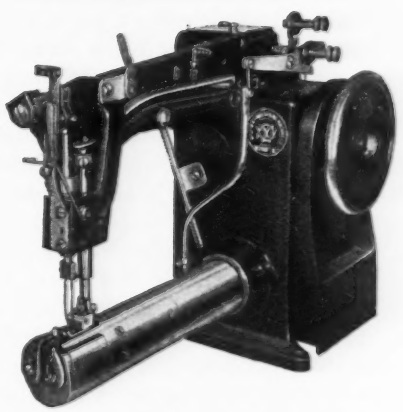
Making swim suits with strong, elastic seams is now every day practice with progressive manufacturers who have equipped their plants with Metropolitan Cylinder Machines.

The Metropolitan, Style W-250-5, Cylinder Machine has seven points of superiority:

1. Built for dependable service—ease of operation—long life.
2. Seams will not rip or break—produces a perfectly flat, elastic stitch.
3. Patented Drop Down Hem Folder, (instantly thrown out of position by a gentle touch of the operator's finger) simplifies circular hemming.
4. Hemmers instantly interchangeable, furnished for the armholes, necks, and trunks.
5. The ONLY Cylinder Type sewing machine with *Automatic Lubrication,* insuring low maintenance costs—high speed.
6. Ample clearance under Presser Foot for easy removal of work.
7. Hemming costs reduced more than thirty per cent.

Metropolitan Cylinder machines are not only adaptable for high-speed cover seaming work on bathing suits and sweaters, but are also used extensively on sport coats, sweat shirts, knit underwear, and other articles.





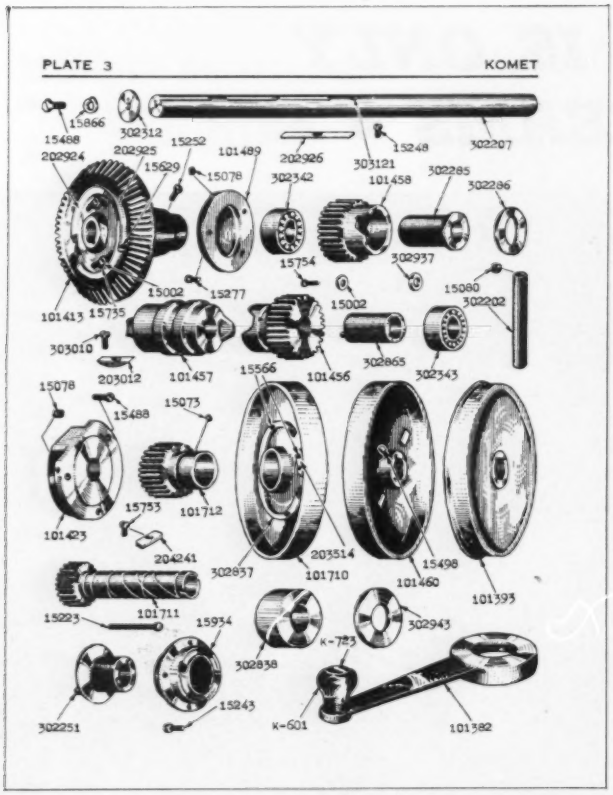
METROPOLITAN CYLINDER MACHINE STYLE W-250-5

See it in operation at the Knitting Arts Exhibition

Metropolitan Sewing Machine Division of

WILLCOX & GIBBS SEWING MACHINE CO.

214 West 39th Street • New York, N. Y.



Some machine fixers do not make full use of the brake release lever stop screw adjustment; if they find a chain rack wheel without sufficient friction they simply run the stop screw inward a few turns and call it good. That will work *only* when the release lever is far enough away from the frame of the machine to fully utilize the pull on the spring. As the stop screw is run *in* the pull on the release lever spring becomes weaker and will not put sufficient pressure on the chain rack wheel brake shoe to keep it under control.

Notice also that the release levers on some machines will almost rest on the head of the stop screw, or actually touch it as the chain rack wheel revolves and then gradually move *away* from the stop screw as much as 3/16-inch. In such cases test the rack wheel for friction when the release lever is *nearest* to the stop screw head, or actually resting on it. If the friction is not sufficient, run the stop screw *in*, or if the spring pull is about gone, back the stop screw out and reset the release lever.

We have intentionally stressed the importance of keeping this simple device in A-1 working order as failure to do so means machines out of time, bad jam-ups, broken slider butts and needles, damaged or broken ctms in the upper or lower cam ring sections, not to mention tearing down machines, unnecessary labor and losses in production.

Yes, the timing element is important; so very important on the Komet that we shall later come back to it in connection with other adjustments.

The chain racking lever and drum racking lever are both mounted on the same stud side by side, both levers being provided with a roller which rides the racking cams (101412) and (101414). Both levers are also provided with a spring which keeps the rollers on the racking cams. Check the rollers to see that they are turning; flat spots will develop if they fail to turn. Also, make sure that the roller stud setscrews are tight. Petrolatum or a lightweight cup grease makes a good lubricant for both racking cams. A small amount applied weekly will give good results.

The Drum Racking Lever

The drum racking lever moves the main drum, the necessary moves being supplied by the racking cam (101414). The drum racking cam is shaped to supply long and short strokes, each tooth on the clutch drum rack wheel (101387) (Plate 6) being used to make one complete turn of the main drum. Once more the timing element must be taken into consideration and the proper amount of friction must be applied to keep the drum movements under control. The main drum brake is conveniently located on the front of the machine frame; it can be adjusted to put the necessary amount of friction on the main drum in a few minutes. Excessive friction on the main drum should be avoided as it does not help to control the drum movement but simply increases the load of the racking mechanism, which in time will mean a badly worn racking pawl.

Now the reader may ask "how can the fixer know when the friction on the main drum is just right?" One way to determine this is to stop the machine with the main drum at starting position and rack the drum around by hand. Most fixers develop a sense of feel which tells them whether or not a drum moves too freely. Another way to check on the main drum tension is to watch the drum closely when it moves off the heel or toe and if it appears to roll and the clutch goes over with a loud 'bang' you may be sure the drum is moving too freely.

The camming action of various parts helps to increase the momentum of the drum over and above the actual amount of 'push' supplied by the racking lever. The friction on the drum must be sufficient to counteract this added momentum. It will also be worthwhile to remove the brake shoe and wipe the lining with a piece of waste saturated with gasoline, thus restoring the holding power instead of trying to increase friction by tightening up the brake adjusting screw. It is only reasonable to assume that constant use decreases the amount of friction on the drum; the safe way is to check up at regular intervals and *prevent* trouble rather than wait until something happens and then correct it.

The Parts Shown in "Plate 3"

In Plate 3 of the Komet and Links & Links catalog we see the main shaft (302207), driving bevel gear (101413), clutch (101457), reciprocating pinion (101458) and other parts which constitute the major part of the driving mechanism. Once more we find a new feature, which by this time Komet fixers have taken for granted and which means much to smooth running, low upkeep costs and long life. We refer to the many ball bearing races shown on Plates 2 and 3, and also on the other plates in the parts catalog. If we stop to consider the driving mechanism as a whole, we can readily see that it was designed to do a job

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HALF HOSE ANKLETS

AMERICAN

Super-mercerized DURENE*

The yarn of dependable, uniform, quality that meets all demands of production-minded knitters; producing a better product, fewer seconds, with less waste and loss of production time.

KNITTING ARTS EXHIBITION
PHILADELPHIA, APRIL 21-24
(BOOTHS 388, 389, 394, 395)

KNEE LENGTHS

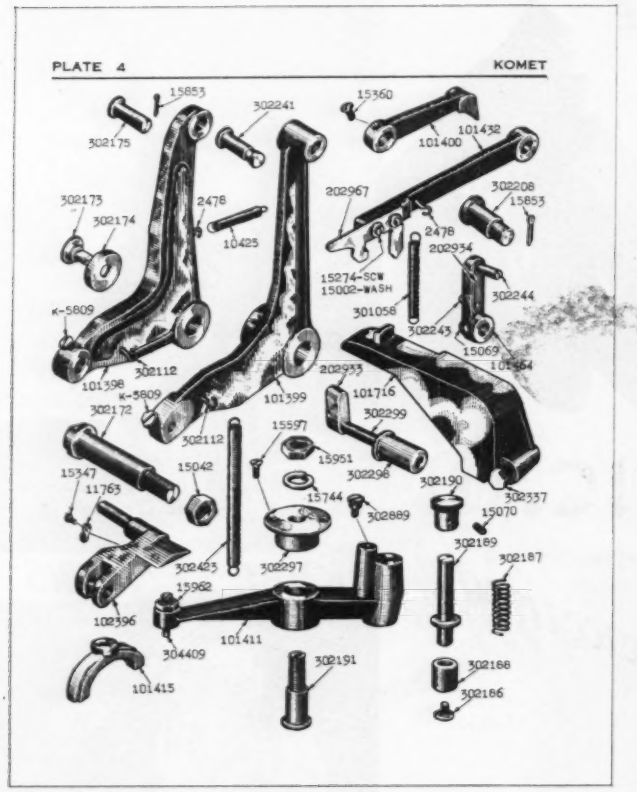
SERVICE WEIGHT F.F.

* 1. MUST BE MADE OF COMBED YARN
2. MUST BE WARP MERCERIZED
3. MUST BE 2 PLY YARN

AMERICAN
YARN AND PROCESSING COMPANY

MOUNT HOLLY N. CAROLINA

CHICAGO, ILLINOIS	CHATTANOOGA, TENN.	HIGH POINT, N. C.	NEW YORK, N. Y.	PHILADELPHIA, PA.	CHARLOTTE, N. C.
Mr. E. W. Wood 222 West Adams St.	Mr. Tom Moore 735 Chestnut Street	Mr. E. J. Holbrook	Schoolfield & Co., Inc. 40 Worth Street	Roland Swallow Schoolfield & Company 3701 N. Broad St.	Cosby & Thomas



and we know from experience that it does that job well.

An abundance of ball bearing races does not mean that lubrication can be neglected or worse, forgotten; these anti-friction bearings and races should not wait until the fixer or his helper find time to oil up, but they should be considered equally as important as actual machine fixing. The actual machine fixing done by the fixer can be divided into two classes, correcting trouble and preventing trouble. The more trouble he can anticipate and prevent the less trouble he will have to correct. Using the right kind of oil, putting it in the right places, and doing a thorough job regularly will prevent trouble, save time, labor and expense.

Another new feature on the Komet which is worthy of comment is the slowing down device. This is actuated by the slowing down cam (302837), which is attached to the fast speed pulley (101710). Additional mechanism (not shown herewith) which operates in connection with the regular belt shifting device, shifts the belt from the fast to the slow speed pulley at every yarn change when the machine is set up on horizontal stripe numbers. The machine slows down *at* the *time* and *during* the *time* required to make a yarn change; the yarn changing links in the pattern chain put the device into action. The general practice when making horizontal stripes on circular machines is to run constantly on the slow speed pulley or at a slower speed than that used for plain work. This is done to avoid bad lapping in yarn changes, which means increased waste and seconds if speeds are excessive. The slowing down device makes it possible to run a Komet at the normal rate of speed on horizontal stripe numbers with a small percentage in loss of machine time as compared to plain numbers.

The Parts Shown in "Plate 4"

Earlier in this article we gave some consideration to several parts shown on Plate 4. Little else need be said about the remainder of the parts inasmuch as they do not give any out of the ordinary trouble. The drum racking pawl (102396) is of the new type and will stand more abuse without breaking than the old style two-piece pawl would. The new style pawl is also especially designed to assure accurate engagement of teeth in the drum rack wheel—it seldom misses a tooth, which means less machine trouble. Occasionally we do find a broken racking pawl spring (10425) which of course might cause the pawl to miss a tooth, but we have also found machines running with a pawl spring missing and no one knew how long the spring had been gone. All of which speaks well for the new pawl. From actual experience the writer would advise changing over to the new style pawl as soon as the old pawls become worn sufficiently to warrant replacement.

After new machines have been thoroughly limbered up, it is advisable to check up on the clutch shifting mechanism. The timing element is once more important and here we must take into account all parts which have anything to do with the actual shifting of the clutch. It is safe to assume that the clutch will not shift too early once it has been timed properly, but constant use, a little lost motion here and there, may cause it to shift *late* and it may be hard to shift due to being shifted late.

Suitable adjustments are provided on the clutch drum whereby it can be advanced or retarded to get a smooth shift, which will reduce wear and tear on the complete shifting mechanism. Make sure that the clutch lever fulcrum pin (302191) is tight and also that the roller (302188) turns freely on its shaft; if the roller fails to turn, flat spots will develop and cause lost motion, and in such cases the clutch will not be fully in. Flat spots on the roller will also cause unnecessary wear on the shifting cams located on the shifting drum.

Before we conclude the discussions of the Komet driving mechanism, we feel that a few remarks are in order about one additional part of this unit. We refer to the cylinder drive shaft (302090) shown on Plate 12 in the Komet parts catalog. This is a vertical shaft having three pinions, the top pinion (101-363), lower pinion (101364), and wind up pinion (101-377). The top pinion meshes into the upper cylinder carriage, the lower pinion meshes into the lower cylinder carriage and the wind up pinion located on the lower end of the shaft drives the work drum which is equipped with a winding up device used to pull the hose down as the knitting proceeds.

One of the many important things in connection with building a complete Komet machine is the location of the upper cylinder. The upper and lower cylinders must be in perfect alignment because they must turn together as though the two were but one long cylinder. Transferring needles up and down would be impossible without perfect alignment and synchronized movement of the upper and lower cylinders. The upper pinion can be advanced or retarded on the shaft, which permits keeping both cylinders in time according to the circumference of the cylinders,

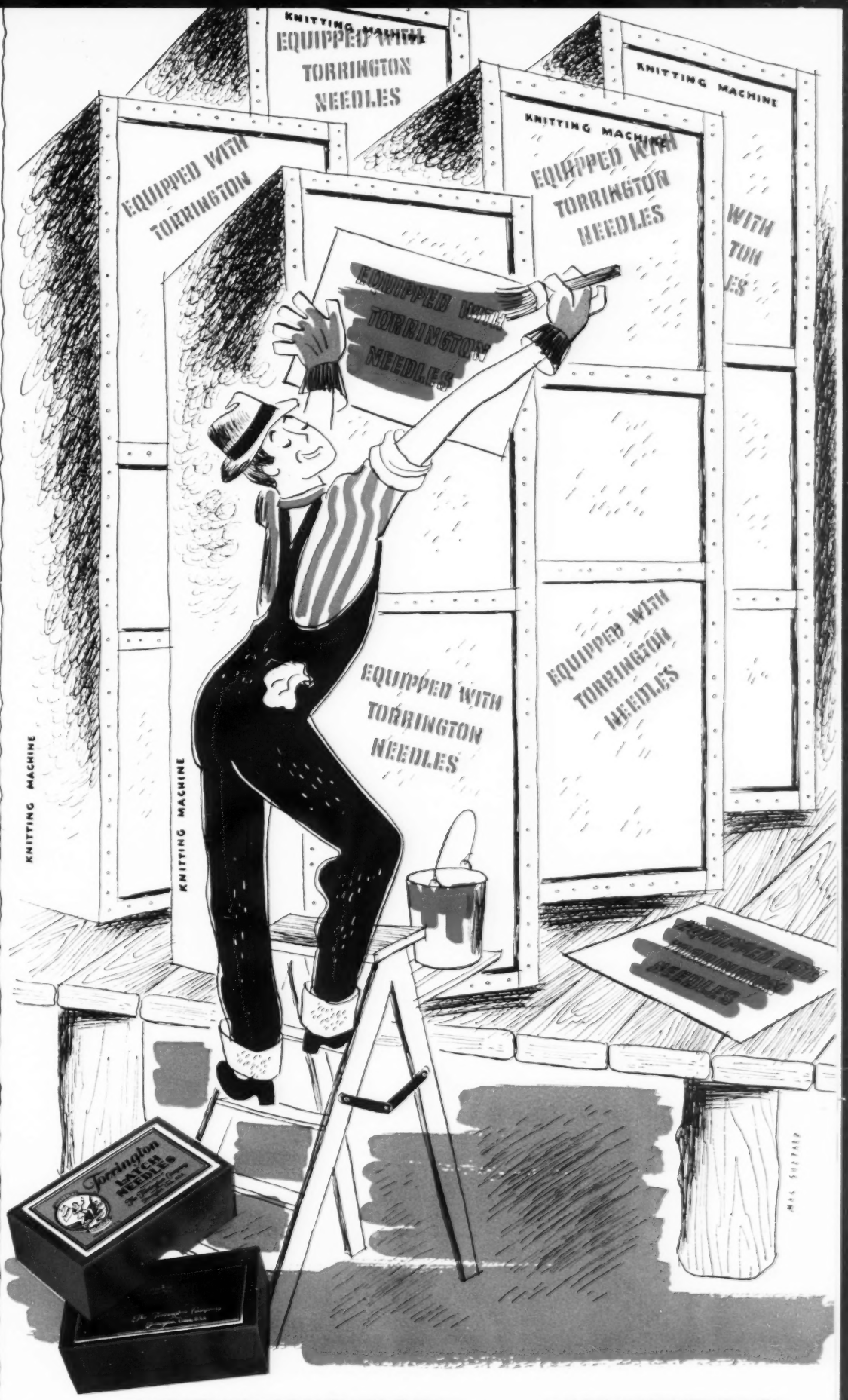
YE OLDE TORRINGTON ALMANACK

Thirty Days Hath APRIL

☛ The month of APRIL derives its name from the Latin verb APERIRE, meaning to open. Among the things OPENING up at this time of year, besides the buds and the SEED catalogues, are closets and attics—to let out such articles as fishing tackle, tennis shoes, golf clubs, ice cream suits and other summer MATERIEL. Opening up also at this time of year is the PRACTICAL JOKER'S usual bag of tricks. Watch out for rubber chocolates, exploding cigars and COTTON BATTING in your DOUGHNUTS—and don't say YE OLDE ALMANACK didn't warn you.

People born on or between April 21 and May 20 are called TAURIANS, coming under the Zodiacal sign of TAURUS, the Bull. Taurians are usually very INTELLIGENT and equally GOOD-NATURED but are apt to be on the SKEPTICAL side. They are the Doubting Thomases of the world. In cases where the JURY IS HUNG, nine times out of ten it is a Taurian jurist who is doing the HANGING. However, when a Taurian is convinced he is convinced ALL THE WAY THROUGH and becomes an enthusiastic supporter of whatever or whoever it was he DOUBTED. Taurians, as you may well imagine, are extremely TRUSTWORTHY and make good executives, lawyers, bankers and BUYERS of knitting mill equipment.

Astrological counsel for KNITTING MILL MEN who are Taurians: Ye Olde Almanack advises that the coming year will be an IMPORTANT one in your career and WILL LEAD to continued success if you are alert to OPPORTUNITIES for improving production. For example, consider the fact that most mills known for HIGH QUALITY knitting use Torrington Needles, and that they have the further indorsement of the knitting machine builders, many of whom equip their MACHINES with Torrington Needles . . . Order TORRINGTONS now. ☚



TORRINGTON LATCH NEEDLES

THE TORRINGTON COMPANY, TORRINGTON, CONN., U. S. A. • ESTABLISHED 1866

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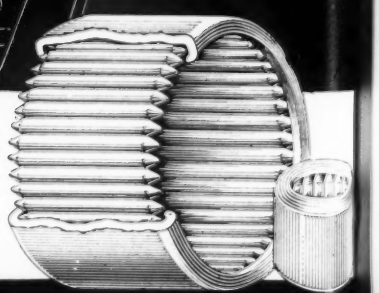
How do you figure production costs on your FULL-FASHIONED MACHINES

OF COURSE, the words "production costs" mean one thing to the user of full-fashioned machines; another thing to the builder. The user figures production costs in terms of operating cost of the machine per unit of output —cost for power, repairs, outage time, servicing. The builder thinks in terms of cost of materials and labor to assemble.

Whether you use or build, you will probably find that your production costs are lower when you use machines equipped with Torrington Needle Bearings. The *user* profits by their anti-friction operation, which makes possible lower power costs and higher output; by their long life and efficient lubrication that reduce the need of maintenance attention and repairs.

And the *builder* finds that the Needle Bearing gives his product extra sales advantages, yet keeps production costs down. Not only is the Needle Bearing low in first cost, but its unit construction makes it easy to install. Moreover, the Needle Bearing is so compact that it often allows savings in the cost of other parts through simplification of design. Torrington engineers cooperate in adapting the Needle Bearing to existing product designs.

Investigate the advantages of the Needle Bearing. For more detailed information, write for Catalog No. 115. For Needle Bearings to be used in heavier service, request Booklet 103X from our associate, Bantam Bearings Corporation, South Bend, Indiana.



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Boston New York Philadelphia Cleveland
Detroit Chicago London, England

TORRINGTON
NEEDLE BEARING

and this is vitally important from a knitting and transferring standpoint.

Since both cylinders must work in unison, lost motion between them must be prevented. A simple and positive arrangement is provided, which makes it possible to take up lost motion between the pinions and their respective gear carriages. This is done by attaching an adjusting pinion (101362) to both upper and lower pinions. If and when lost motion develops, tighten the adjusting screws (15628) sufficiently to remove it. Excessive pressure on the adjusting screws should be avoided. If it becomes necessary to reset the upper pinion, make sure that the two adjusting screws, adjusting screw nuts and the regular pinion setscrew are tight. The lower pinion is keyed to the shaft and supplied with a taper pin, both serving to keep this pinion firmly in place.

And last but not least, lets not forget the oil holes provided in every necessary place on the cylinder drive shaft: Keep the shaft properly oiled today and save time, labor and expense tomorrow.

K. O. METZ

The Dyeing of Vat Tan Colors on Government Contract

• THE procedure described here, for dyeing vat tan on government contract socks, should be of especial interest to mills running anklets and children's hose. There are a number of colors in this type of goods that, due to brightness of color, must be knit ingrain. A small amount of experimenting, based on the methods given here, should develop an entirely satisfactory dyeing method for these colors.—The Editor.

WITHIN THE last few months the purchasing agencies of the Quartermaster Department of the U. S. Army have let contracts for the knitting and dyeing of millions of pairs of socks as a part of the expanding national defense program. As a result, a number of knitting mills that had never given a thought to government business bid on and received contracts, in varying amounts, as a part of this emergency expansion.

The knitting of these goods is a simple problem, since both the yarn counts and machine gauges are specified and it requires only the adjusting of fabrics to get required size, weight, and stretch. This is a problem that can be handled by even an average knitter.

The dyeing of vat colors on cotton socks, however, has brought before the dyers of these mills a type of dyeing with which most of them are totally unfamiliar. The rigid specifications in the contracts have made it necessary to employ dyes and a type of dyeing heretofore used only in dyeing skein and package yarn for use in ingrain work and for application on piece goods.

For some years past dyestuff manufacturers have had specially prepared vat or Indanthrene colors for the pigment type dyeing; the dyestuffs so used being specially ground so as to be easily dispersable in water. These dyes are applied in an unreduced state and after the goods are thoroughly saturated, and the dyestuff padded into the goods, the reducing chemicals are added and the dyeing completed in the usual way for vat colors. With careful control the results obtained on socks may be expected to be uniformly good despite the fact that they have been applied to hosiery in comparatively few cases and never on so large a scale before.

The experience on which this article is based consists of the dyeing of 15,000 dozen mercerized cotton socks made to U. S. Army specifications and dyed the vat tan shade as specified on Army contracts. All of these were dyed without any rejects traceable to dyeing defects and without a single lot going off shade.

The stocks were knit on the HH type automatic machine, he tops being beaten out to get a true ribbed effect. The dyestuffs used may be obtained from any of the concerns furnishing vat or Indanthrene colors of the dispersable type. Dyestuffs from all sources have worked equally well. The same applies to all dyeing assistants and chemicals used.

To prepare the goods for dyeing the loads were prepared as follows: size 9, 132 dozen, decreasing 2 dozen for each half size so that on size 12 a lot consisted of 120 dozen. The lots were thus counted out and not weighed.

The ops were wet in a solution of a quick wetting out agent about an ounce to the gallon of water, and beat out over a rod. The socks were placed in a dyehouse buggy so that the tops were in one direction thus keeping the heels and toes as dry as possible.

A paddle type dyeing machine of 100-pound rating was used, for the loads given, no goods being put in nets.

The machine was filled to dyeing level and brought to a boil and into this bath was added 2 pounds of a good wetting agent, stable in a highly alkaline bath. 24.4 ounces of vat Olive R (Color Index No. 1150) and 14.4 ounces of vat Brown R (Color Index No. 1151) were pasted in cold water and boiled up under a steam pipe and added to the boiling bath. One poun of a suitable retarding agent was added and goods entered at a boil. The procedure continues as follows:

Run at a boil for 10 minutes and add 6.5 pounds of flake caustic soda 76 per cent. Use great care in en-

tering caustic to avoid having caus tic come in direct contact with goods. The caustic may be dissolved in water before adding to machine. Boil 5 minutes and cut off steam. Cool 10 minutes and if temperature is above 170 degrees F. add cold water to bring temperature to 170 degrees F. Adjust steam to hold this temperature and sift in 5 pounds hydrosulphite. Run 5 minutes, and add 15 pounds common salt, run 15 minutes and flood machine. To do this open cold wat er valve and adjust drain valve so tha he goods will continue to circulate and remain below water. Rinse until all caustic is out of goods, check with phenophthalein paper phenaphthalein paper to insure an excess of caustic and with indanthrene yellow paper to be sure that reduction is complete just as in any vat dyeing. It will be necessary in some cases to add about a pound of hydrosulphite about 5 minutes before flooding machine.

The temperature of reduction at 175 degrees F. is higher than is usual with vat dyes but the slight loss in fastness properties is more than offset by the gain in leveling and penetration of dyeing.

This dyeing procedure works equally well in either the rotary or paddle type of dyeing machine, the rotary type having a slight advantage from a cost standpoint but the for 15 minutes and add 6 pounds hydrosulphite. Run 25 minutes and add 10 pounds common salt, run 5 minutes and flood as before until caustic is out of goods. Oxidize with perborate and finish with 10 minute soap boil as before. Since the reduction is carried at a higher temperature in the last method and the running time is longer, larger additions of hydrosulphite will be found necessary to keep bath in condition. It will be found that it is better to keep goods clean so that severe boiling out will not be necessary.

Carelessness in weighting materials and failure to check bath for alkalinity, and reduction, are the

Above, finished goods, grey goods from machine, and after beating out

until the paper no longer shows pink.

The flooding requires about 5 or 6 minutes with a normal water supply. Add 1 pound sodium perborate and turn on steam. Oxidation should be complete by the time bath reaches 140 degrees F. Drap bath and bring next water to boil adding 2 pounds olive soap. A finishing material of the cation active type may be added to assist in boarding but this is a matter for local conditions to decide.

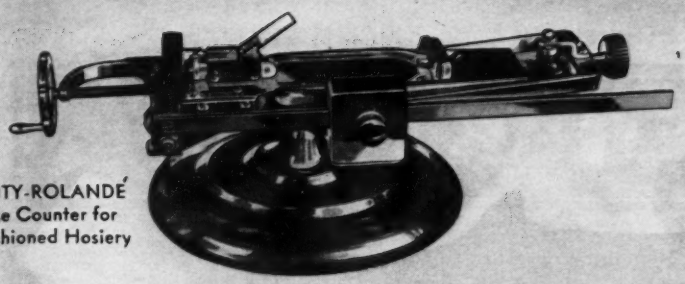
It will be noticed that no glue or glucose was used in the dyeing. Some dyers might prefer to use one or the other as a retarding agent. An addition of about a pound of hydrosulphite along with the salt helps to keep bath from breaking due to a shortage of hydrosulphite. The bath should be checked with paddle machine giving a better leveling and penetration in the dyeing.

The procedure given is based on clean goods having no dirt and oil or machine stains so that no boil out is required to clean goods. Many mills will knit some of these on old machines that have been out of service and dirty goods will result.

The following processing will take care of these goods; as before, similar products may be used with equal success: After beating tops the goods are boiled out for 30 minutes with 3 per cent borax and 3 per cent of a detergent soap. This bath is dropped and a new bath brought to 140 degrees F. Enter 2 pounds of a good wetting agent 5 pounds caustic run 5 minutes and bring to 190 degrees F. in 15 minutes. Run at 190 degrees F. points on which the success of the dyeing depend and if these are watched carefully every lot will check for shade.

In applying finishes, be certain that materials used will stand up in storage and not develop a rancid odor, for that is one point on which the specifications are strict.

This dyeing procedure should prove of more than passing interest to knitting mills running anklets and children's hose, for there are a number of colors in this type of goods that, due to brightness of color, must be knit ingrain. A small amount of experimenting, based on the foregoing methods, should soon develop a dyeing method for these colors that would prove entirely satisfactory for dyeing these colors on that class of goods.



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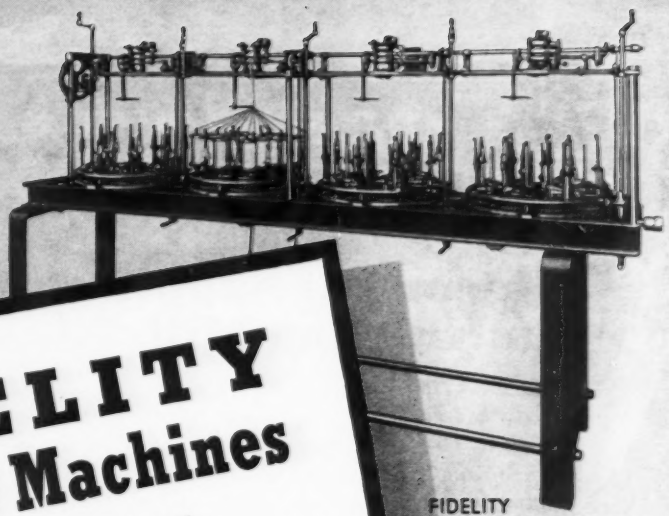
Course Counter for
Full Fashioned Hosiery



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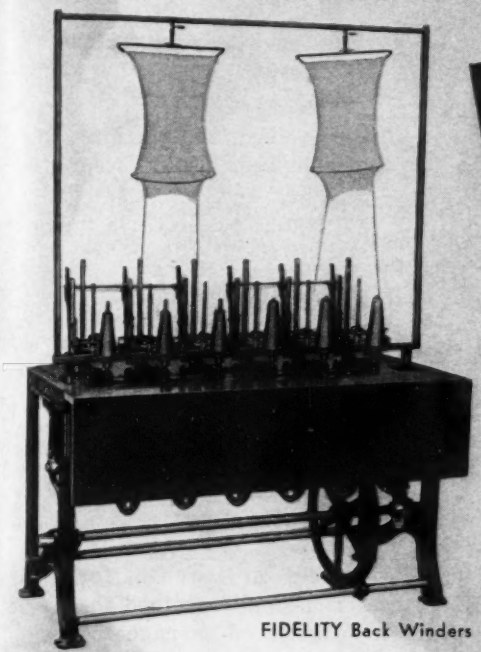

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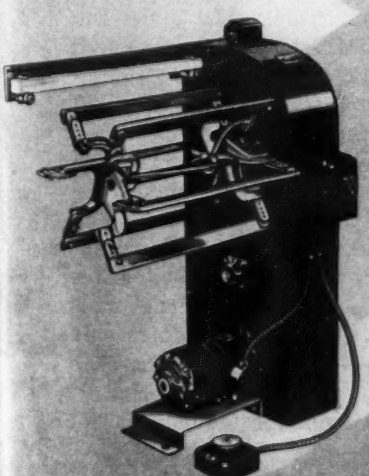
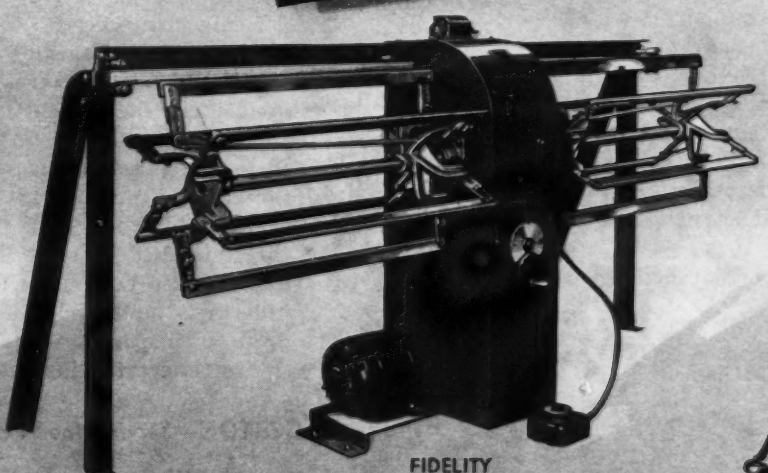


FIDELITY
Single-End Skein Reeler



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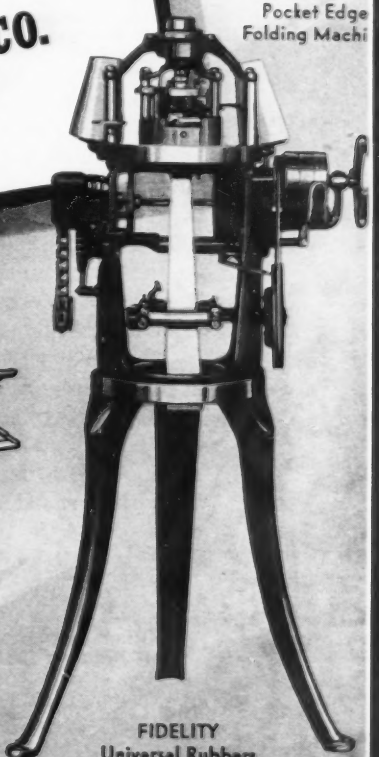
Double-End Skein Reeler



FIDELITY
Universal Rubbers

KNITTING KINKS

Record of Supplies in Knitting Mill

EDITOR COTTON:

What system do you use for keeping a record of supplies?*—CONTRIBUTOR NO. 7122.

In answering this contributor, I might say that I have found that a good recording system of keeping track of supplies issued for maintenance of knitting machines is most essential for the successful operation of the knitting department, because it is only after stock taking that the head of the department knows what his consumption of machine parts, etc., has been for the period.

I know several mills that only take inventory every three months, and to my way of thinking this is rather late in the day to start an investigation of what caused an increased consumption of needles, etc., because it is only after inventory taking that steps can be taken to remedy excess uses of supplies. The old established principle of "prevention is better than cure" cannot be exercised to a great extent if inventory taking periods are too far apart.

MIN. STOCK 600

PART NO. .016 X .028 DESCRIPTION PRESSER JACKS BIN NO. 11

DATE	REC'D.	ISSUED	TO WHOM	STOCK	DATE	REC'D.	ISSUED	TO WHOM	STOCK
1-1-41	1000			1000					
1-1-41		200	JONES	800					

Most stationery stores can supply a plain ruled card approximately 8x6 inches, and the machine part number and catalog description can be typed in at the top of the card. The entries on the card are made at time of receiving or issuing parts.

If a plant keeps a record of all parts issued, it knows the quantity used, and what is more important—it knows where the replacements are going. The slightest decrease in stock above normal amounts consumed can readily be ascertained, and it can be determined on which machines the supplies are being used.

The easiest and yet most efficient method of keeping a record of parts used on knitting machines is the card system. A card is made out (see accompanying illustration) for each machine part kept in stock, and a permanent inventory system is kept, with the record showing the date, to whom issued, etc.

It is well worth the time required to keep these cards correctly. As the machine fixer's name or clock number is entered on the card each time he requests a part from the supply department, and as no man wants to be credited with too many parts, he tries to keep his set of machines in good running order by keeping a sharp look-out for ways of preventing smashes, etc.

The mill saves on supplies not used, and the machines get increased production because of less stoppage.

CONTRIBUTOR NO. 7198

*Other discussion on this subject appeared on page 123 of the January 1941 issue.

Pointers on Looping

A contributor believes he has better idea on looping than employee writing "Lay-Out for Small Grey Goods Half-Hose Mill" in October issue . . . . . .

EDITOR COTTON:

I have read the operative's idea on "Lay-Out for Small Grey Goods Half-Hose Mill," and examined the accompanying floor plan which appeared on page 157 of your October 1940 number of COTTON. As far as I know, the design and machinery arrangement is all right; but I do not like the method suggested for handling the goods at the loopers.

In the last paragraph of the section under "Machinery Arrangement" the author of the article wrote: "As each looper completes a dozen she ties it into a bundle, attaches her identifying number to the bundle, and tosses it on the belt which conveys it up to the side of the inspector. This method eliminates time lost in loading and trucking, and imperfect work can be detected almost immediately."

I agree with him that the conveyor system and group inspection will eliminate time lost loading and trucking, and make it possible to catch bad looping before it has time to accumulate; but if each looper must attach an identifying number to every dozen she loops, this would take up too much productive time and make more detailed work for the inspectors keeping track of the four loopers production. And under the best of systems a grey goods inspector has enough clerical work to do.

Instead of attaching numbers to each dozen, I would suggest a different tint on the looping thread to identify each looper's work in a group. For example, the first looper in the group may use an untinted or grey thread for closing the toe; the second a pink thread; the third a light blue; and the fourth a light green or brown. These tints would, of course, be like the tints used on some kinds of plaiting yarns; it is easily boiled out in the dye. And for convenience in ordering, the same color code may be used for each group of loopers.

To relieve the inspectors from the tedious task of

THE NEW ONYX DURABLE HOSIERY FINISH FOR ALL TYPES OF QUALITY HOSE

Announcing *Eternalure*

Eternalure Hosiery Finish produces body, drapability and increased durability to washings. Tends to correct throwing and knitting imperfections. Reduces bagginess and susceptibility to abrasion, chafing and strengthens snag resistance.

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with
beautiful
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Actual photograph of Nylon
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All women want lovely, sheer stockings with fine, straight pencil line seams that are fashion-smart, yet have adequate elasticity and durability.

The new Singer 242-1 was especially designed to produce seams of good quality on the most delicate Nylon and silk hosiery, as well as wool, cotton and lisle. It not only produces better seams which are stitched straight—but is the fastest hosiery seamer on the market today—simple to operate at speeds limited only by the operator's ability to guide the work. The Singer 242-1 has many outstanding features, including:

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Singerlight . . . built into the sewing head directly over the stitching instruments—prevents *eyestrain* when threading the machine — also when guiding selvages to the needle.

Balanced Motion . . . fewer moving parts forming the simplified mechanism avoids vibration at all speeds and assures quiet, smooth and dependable operation.

Automatic Lubrication for all important bearings . . . saves operator's time and avoids oil stains, also reduces wear and mechanical repairs.

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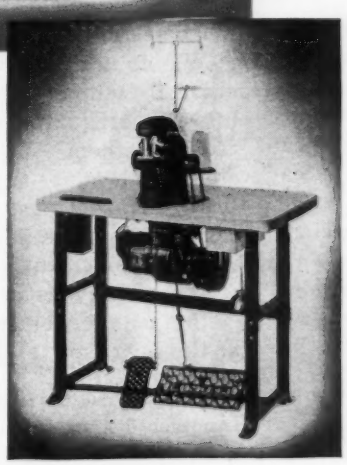

SINGER SEWING MACHINE COMPANY
149 Broadway, New York, N. Y.

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keeping each looper's production separate, the loopers and inspectors can be paid by the hour. Quite true, the piece rate has been established in hosiery mills as standard, but that was before the Wage and Hour Law. Today an operative must be paid a minimum hourly rate regardless of production; so why not pay a straight hourly rate and be done with it?

Of course, the production of loopers will vary from day to day, but take it over a period of months it will run pretty regular. So, I would give each group of these operatives an average daily production, and put them in the clock-punching class. When a group of operatives working by the hour know that so much is expected of them, it is a safe bet that none will shirk because each one will check on the others lest somebody does more than her share of the work.

CONTRIBUTOR No. 7125

Needle Position on Banner Cylinder

EDITOR COTTON:

This is in answer to the question of CONTRIBUTOR No. 7053 on page 166 of the April 1940 issue of COTTON, who has asked: "When changing cylinders on Banner machines, and the ones that are to be used have no needles, what is the best method of determining where the long and short butt needles should be placed?"

The best method that I have found of marking cylinders to exactly separate the long needle area from the short is to take a very narrow gauge steel chisel and chip off a small part on the cylinder wall that lies exactly between the first long and the last short needle at a point right below the lower cylinder band. This it to be done also on the opposite side of the cylinder. Then mark on bottom of cylinder with steel die punch the letter "L" denoting long needle side of cylinder.

CONTRIBUTOR No. 7086

B-5 Makes Waste

EDITOR COTTON:

We are running some Model B-5, 200-needle, 3¾-inch machines on a number using gassed mercerized yarn. In the heel and toe we are compelled to run one end of 40s/2 and one end of 50s/2. The problem that we have not been able to overcome is the excessive amount of waste caused by one of the yarns breaking out as the machine shifts onto the heel and toe, or as it completes the heel and toe.

We have tried putting both of these yarns through a single tension in order to take up all possible slack and thus cause the two yarns to run evenly, but this has not given us the desired results. Any information will be greatly appreciated.

CONTRIBUTOR No. 7206

Air Conditioning

EDITOR COTTON:

Aside from comfort and convenience of employees, what benefits can be derived from air conditioning a knitting room in a full-fashioned hosiery mill? Would you suggest that this be done in the boarding room?—CONTRIBUTOR No. 7113.

Assuming that this man is speaking of heating and the introduction of additional humidity into the boarding room, I would say that air conditioning should not be used in the boarding room unless it is used in conjunction with refrigeration.

Air conditioning produces a uniform condition of temperature and humidity, and in a fine gauge full-fashioned hosiery mill I would say that such uniformity is not only desirable but is essential in the knitting room. When the temperature is maintained uniformly there is very little trouble had with the narrowing and carrier; there is no expansion and contraction of the machine, which is a desirable condition on full-fashioned work, especially on the finer gauges.

A properly regulated air conditioning unit also helps to produce more uniform knitting and to keep the legs of uniform length, which enables one to put less courses in the stocking without worrying about short lengths.

CONTRIBUTOR No. 7118

Odds in Finishing

EDITOR COTTON:

How do you prevent odds accumulating in the finishing department—CONTRIBUTOR No. 6949.

I would like to explain how this is handled in our full-fashioned mill.

We have odds as to length and in our opinion the best way to prevent their collecting in the finishing department is to re-board them and get them through with the same run. There may be many odds, but the safest thing to do with them is to get them out immediately. Some of the stockings may have defects in them, and in this case they are repaired at once and placed in the same run.

CONTRIBUTOR No. 7133

EDITOR COTTON:

We do not have very many odds accumulating in our full-fashioned mill, but those we do have are put into the irregulars instead of holding them back and redyeing them. We do not like to redye our merchandise because as a rule in the redyeing there is a little different cast. Since we do put them into irregulars there is never any accumulation in our finishing department.

There may be a little loss in handling the odds in this manner, but we believe it is the better method in the long run.

CONTRIBUTOR No. 7139

[Another discussion on this subject appeared on page 178 of the October 1940 issue.]

THIS MAY SOUND LIKE a crazy story, but I'm here to testify that it's absolutely true. I do a big business in wool specialties. I'd been using the very same formula for years . . . and I was convinced it was just about the best I could get.

I'D HAVE KEPT on using it, too, if that youngster of mine (just starting in the business!) hadn't insisted that I have it checked. "Call in a C.P.P. man," he urged. "Suppose he can't show us an improvement. *What do we have to lose?"*

SO I WROTE Colgate-Palmolive-Peet to send a man around. After carefully checking our production methods, he recommended a new formula that cut processing time in half *without increasing fulling agent cost.* But that's not all!

OUR PRODUCT now has much better color! It has less odor! It doesn't discolor! It takes dyes better! Best of all, the trade has noticed the improvement! Our salesmen are really going to town now . . . and it looks like a great year—thanks to C.P.P.'s products and technical help.

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TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

Knitters Generally Busy with Higher Prices Bringing Coverage Further Ahead into Prominence—Sharp Advances in Cotton Yarns Major Trend in Underwear—Large Military Contracts for Textiles Cause Delivery Problems—Nylon Seamless Hose Due Soon—Knitters Grant Wage Increases

March 15, 1941

WHILE NYLON GOODS for women are the most active lines in the full-fashioned field, standard silk numbers are now moving at active rates and volume in seamless merchandise is more active. For example, the anklet section of the market has been very active so that the delivery question is coming to the front more and more. In addition, the Army recently opened bids on large amounts of underwear and 17,000,000 pairs of cotton-wool half-hose so that many mills have enough Government business alone to keep them well engaged for months ahead. Underwear mills are confronted with higher costs in the way of probable additional wage increases and also by major rises in cotton and wool spun merino yarns both of which will cause consumers shortly to pay higher prices.

Full-Fashioned

Shipments of women's full-fashioned hosiery have been running well over the same time a year ago when nylons are included; and without nylons shipments have been slightly smaller but now are catching up so that at present it is estimated they are about equal to a year ago. This means that while full-fashioned hosiery is improving it was one of the last lines to benefit by the sharp improvement in business conditions throughout the country as a result of the rearmament drive. A factor that is bringing additional coverage has been the advance in raw silk but this to date has not gone far enough to make any wide movement in this direction.

The silk full-fashioned trade continues to be affected unfavorably as a whole by the nylon situation. Many consumers want nylons only and this makes for a tight delivery situation where knitters are limited as to the amount of yarn they can secure. It makes for a very active business in only a small part of their total volume and causes hesitation in the silk or bulk lines. It is estimated that a year from now nylon yarn will be available to make about 40 per cent of the full-fashioned needs and this factor may continue to hold back a real spurt in the full-fashioned and although continued gains of importance in employment are expected to give even this branch of the industry a real boost. In addition, manufacturers that have coarser gauge knitting machines assert they are doing little as most of the call is for 45-gauge goods or finer with the trend still in that direction. This is reflected in the number of mills having old equipment either going out of business in this area or selling old machines. In the latter, long-ahead deliveries on new machines makes their problem difficult.

Half-Hose

Increased demand for woolen bundle goods from the Army and Navy is giving such manufacturers the largest backlog of business they have had in years. This may be seen from the record of shipments of such goods over the last year when the rise over 1939 was about 30 per cent. This expansion in volume was especially noticeable in the final quarter of last year when shipments were almost 50 per cent ahead of the same 1939 months. In addition, civilian buyers of all types of half-hose have been operating at an active rate. This is because large buyers fear that the delivery problem may be acute by next fall and are looking ahead to a possible wage advance under the Federal Wage and Hour Division, a seamless hose committee having been organized to make a new wage recommendations.

Another bullish factor that has pepped the market is that cotton and merino type yarns have been advancing rapidly with deliveries also a problem in these. During January, 1941 shipments of half-hose were more than 15 per cent ahead of the same 1940 month but in bundle goods the increase was 29 per cent. One section that has not been showing up as well as formerly is athletic socks where shipments have been under a year back. Shipments of slack socks were 9 per cent ahead in January compared with more than 17 per cent in standard type half-hose which is a reflection of the large amounts bought for the military forces which all are full length.

Seamless

There is a fair demand for women's seamless hosiery with shipments averaging more than 7 per cent ahead of the early weeks of 1940. The appointment of a new seamless wage committee is a factor that is being watched because it may cause a major change in minimum wage levels which would mean a sharp increase in such knitters' costs. A new development is the coming offering of seamless nylon goods on which knitters are reported to be working. It is expected, however, this type merchandise will be confined to the higher priced brackets with such prices as $1.00 a pair and over expected. The goods are made on 340-needle and finer machines. It is believed this new merchandise will be offered to consumers in the next few months.

Underwear

Underwear knitters are busy, and considerably more so than this time a year ago, although last year was an active one. Between heavy Government and civilian coverage mills are more than busy and additional machines have been placed in operation with a resultant increase in the number of underwear workers employed.

Prices are very strong due to higher cotton and wool yarn quotations over recent weeks, to say nothing of the advancing trend in wages. Utica Knitting Co., early this month granted a 7 per cent increase in wages.

Latest data covering January show underwear mills operated almost 11,000 machines this year compared with 9,878 for the same month in 1940. Manufacturers are already well sold for the coming fall season between civilian and Government demands and additional spring goods orders are coming through with prices advancing due to the sharp increase in both carded and combed yarns. Single combed yarns have advanced about five cents a pound this month or 30s from 38 cents to around 43 cents at present.

"A MANUFACTURED MIRACLE" says JEAN PARKER

in referring to modern hosiery

"I look upon modern hosiery as a sheer miracle and marvel how such perfection can be duplicated in hundreds of thousands of pairs," said Jean Parker, the glamorous motion picture actress. True — the manufacturer has not only created something as lovely as the modern stocking, he must unvaryingly maintain that perfection in *every* pair. With full realization of the responsibility placed upon the boarding operation, Proctor & Schwartz have evolved a mechanical wonder in a machine that uniformly dries, strips, piles and counts hosiery at a speed as high as 32 dozen pairs per hour (52 dozen pairs per hour on half hose).

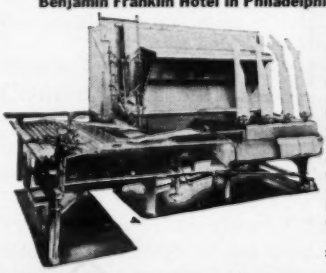
As a representative consumer, Miss Parker had explained to her the manufacture of a modern stocking. Her first comment was that she saw how very important proper boarding and drying could be to quality and appearance.

PROCTOR & SCHWARTZ • INC • PHILADELPHIA

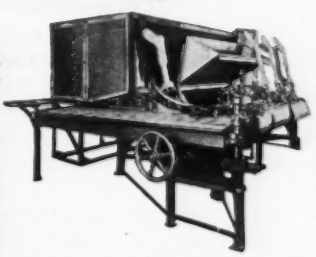
Lovely Jean Parker, famous star of many great photoplays.

Miss Parker is here being interviewed in her suite at the Benjamin Franklin Hotel in Philadelphia by our inquiring reporter.

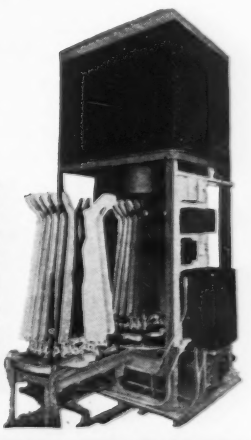
Miss Parker here demonstrates a point on one of her own shaded hose.



Left — Proctor Automatic Boarding, Drying, Stripping, Piling and Counting Machine for Women's Hosiery. Mechanical Capacity, 32 dozen pairs per hour. Requires only 9½ feet by 11½ feet of floor space.



Right — Proctor Automatic Boarding, Drying, Stripping, Piling and Counting Machine for Men's Half Hose. Mechanical Capacity, 52 dozen pairs per hour. The size of the Machine is only 10½ feet wide by 9½ feet deep.



Right — Proctor Automatic Single Operator Pre-Boarding Machine for Nylon Hosiery. Productions range from 15 to 20 dozen pairs of stockings per hour, per boarder. Occupies less than 6 by 10 feet of floor space.

See Them at the Knitting Arts Exhibition

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*Tests by U. S. Testing Company

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New Seamless Hosiery Committee Studies Wages

General Philip B. Fleming, administrator of the Wage and Hour Division, recently announced the appointment of a committee to investigate and recommend a new wage minimum in the seamless hosiery industry. This committee was scheduled to hold its first meeting on April 7. In preparation for this meeting the National Association of Hosiery Manufacturers together with the Southern Hosiery Manufacturers Association scheduled a conference of seamless hosiery manufacturers at High Point, N. C., on March 20. The notices for this event pointed out that in view of the fact over 75 per cent of the seamless capacity of the industry is located in the South and High Point not only has many of these plants besides being centrally located that it was regarded as the logical place for such a meeting.

The entire hosiery industry is now operating under a wage order issued by the administrator of the Wage and Hour Division as a result of an investigation made by Industry Committee No. 3, which recommended a minimum of 40 cents an hour for the full fashioned hosiery branch and 32½ cents an hour for seamless hosiery. The administrator put these recommendations into effect September 18, 1939. The present committee will review the economic and competitive conditions affecting the seamless hosiery industry to determine how high a minimum up to 40 cents an hour can be established without substantially curtailing employment. The request that led to the re-opening of the seamless hosiery wage minimum question was filed by the American Federation of Hosiery Workers which at the same time indicated its intention of driving toward a 40-cent minimum. It is evident that the National Association of Hosiery Manufacturers will combat the attempt of the union, as it is believed by the industry that should the seamless minimum go up to 40 cents the union would at once demand a re-opening of the full-fashioned minimum.

Seamless Hosiery Committee Members

The new seamless hosiery committee is composed of the following: *For the public:* G. Allan Dash, Jr., chairman, University of Pennsylvania; Frank De Vyver, Duke University and Burton R. Morley, University of Alabama. *For the employees:* J. Lee Bausher, Infant Socks, Inc.; J. C. Greer, Charles H. Bacon Co, and W. W. Neal, Marion Hosiery Mills. *For the employees:* Alfred Hoffmann, Bert Branham and Ambrose McCormick, all of the American Federation of Hosiery Workers.

FORECAST

(Opinion submitted by COTTON'S market correspondent)

Philadelphia, March 15, 1941

THERE HAVE BEEN new developments in the general business picture over the last month that indicate the assertions emanating from Washington that we need have no fears of inflation and that prices would be kept under control are not going to prove altogether true. For recently commodities have been advancing in price and additional wage demands are being made with new increases being granted in the textile industry itself. A large New York State underwear knitter just raised wages. The American Woolen Co. has also made increases, and there are reports cotton spinners will do so.

Advances in wages and commodities coul donly mean a general higher price level for business in this country and if such a trend continues there might be inflationary sentiment which has been so noticeable by its absence in recent months. Yet it is sure that such a movement would not continue to extreme lengths so that a run-a-way market would ensue.

The Government has weapons in its hands to prevent any such condition but it is doubtful if it has the means to prevent a conservative price increase in business, meaning commodities, wages and wider profits although the latter are not going to skyrocket under any conditions. When they do high taxes will knock them down. Indications point to very active business ahead, with prices trending gradually upward and with profits remaining small in comparison with volume but still better than in previous lean years for most textile organizations.

This advancing trend has been apparent in cotton, silk and wool over the last month and in such lines higher prices are being quoted than a month back. The delivery picture in textiles is made tight in some lines by the enormous amounts of goods being bought to clothe the new Army and this is a factor that is apt to grow still further in scope. It means some lines, such as men's wear weavers, are doing about half their business in military orders while numerous wool blanket mills do even a greater percentage for the Army.

Prices over the coming weeks will become firmer both in the raw material, yarn and goods market with deliveries being a problem in many instances. Such a situation always means reaching for larger amounts of yarns or raw materials than needed with consequent price advances and this is not going to prove an exception. It means that manufacturers and retail buyers should operate somewhat further ahead but not get panicky in the delivery situation and with a larger volume of business inventories can be expanded over early 1940 levels. Much in this connection has been done by some and further inventory accumulations in such instances cannot be recommended even in the present situation.

F. T. C. Issues Rules for Wool Labeling

The Federal Trade Commission has just issued wool-labeling rules for which the knitting and other textile trades have been waiting for five months as a guide in the proper labeling of their merchandise beginning on retail counters next July 14. While these new rules are tentative pending suggestions of changes and objections they are not likely to be changed substantially when the final draft is issued. All parties affected by the rules are asked to submit suggestions, objections or views not later than April 12. Suggestions to hosiery manufacturers have been prepared by the National Association of Hosiery Manufacturers. Some of the major points made in the hosiery bulletin are: each manufacturer of a hosiery wool product must keep records for at least three years showing the fiber content of such product; hosiery for export is not covered by the law but imported wool products are covered.

The original responsibility of placing on the hosiery wool product the proper stamp, tag, label or other means of identification required by the law is on the manufacturer of such product. Irregular or sub-standard products must be labeled in the same manner as first quality goods. The law grants no specific tolerances but provided that deviation of the fiber contents from percentages marked on the goods shall not be misbranding if the person charged with misbranding proves such deviation resulted from unavoidable variations in manufacture and despite the exercise of due care to make accurate statements on the stamp, tag, label or other means of identification. Fibers other than wool each of which constitute 5 per cent or less of the total weight need not be designated separately and may be described together as "other fibers". The separate percentages of "wool", "re-processed wool", or "re-used wool", must be given if the percentage of any one of them is 5 per cent or less. In all cases the percentages given for the various fibers must total 100 per cent.

The percentages of the weights of the fibers in hosiery should be based on the following sizes: womens, 9½; misses', 9; men's, 11; boys' half-hose and anklets, 9; boys' golf hose, 10; children's hosiery, 8; and infants' hose, 5. It is necessary to label only one stocking of a pair. The association believes that the names and percentages of the fiber content may be transferred on the sole and the name of the manufacturer or distributor may appear on a rider ticket.

Nylon Seamless Soon to be Sold

Women's fine gauge seamless nylon stockings which are expected to retail at more than $1.00 a pair will be placed on the market in the near future. This type merchandise will be made on 340-needle and finer circular knitting machines. A number of women's seamless hosiery manufacturers have been running nylon yarn experimentally for some time but representatives of such firms have recently stated they had no accurate information as to when seam-

less nylons would be made available to the consumer. Some have stated they do not believe this will come about until next fall season and another declared that up to the present time none of the seamless nylons made in his plant had yet received the approval of the du Pont company.

Seamless mills have run both 30 and 40 denier nylon in their stocking legs but which size is eventually used will rest with du Pont. It is reported that although the seamless nylons will be what are called in silk "bare leg stockings" the nylons will not be merchandised under this name and it is also understood none of them will have a mock seam. It is reported in some quarters of the market that the new nylon seamless merchandise will retail as high as $1.35 a pair, and it is understood that the decision is definite to confine nylon yarn to seamless machines of 340 or more needles.

This policy would be similar to that followed to date in the full-fashioned hosiery industry where nylon is restricted to 45-gauge and finer machines or, roughly, to one half of the productive capacity of this trade. In the women's seamless hosiery industry the percentage of 340-needle and finer machines to the total is much smaller than one half. It has been estimated that there are less than 1,000 women's seamless hosiery knitting machines in place of 340 or more needles about half of which are in one plant. Ever since details of the method of manufacturing hosiery from nylon yarn became generally known many hosiery men have felt that women's seamless hosiery made of the new yarn would be excellent stockings.

Government Promotes Cotton Stockings

The Consumers' Guide, a publication of the Consumers' Counsel Division of the United States Department of Agriculture, reports that "In the past year a new type of cotton stocking has appeared, full-fashioned to fit the leg and made up in fashionable colors. Unlike the old type cotton hose, these are not fuzzy. The yarn from which they have been knit has been combed, mercerized and gassed to rid it of fuzz and give it an attractive lustre. These latest cotton hose are the direct result of research by the Bureau of Home Economics of the United States Department of Agriculture. In the past two years this Bureau has designed over 80 styles of good looking full-fashioned cotton hose. Since these designs have been released to the trade a number of manufacturers have begun making up some of them and they are already available.

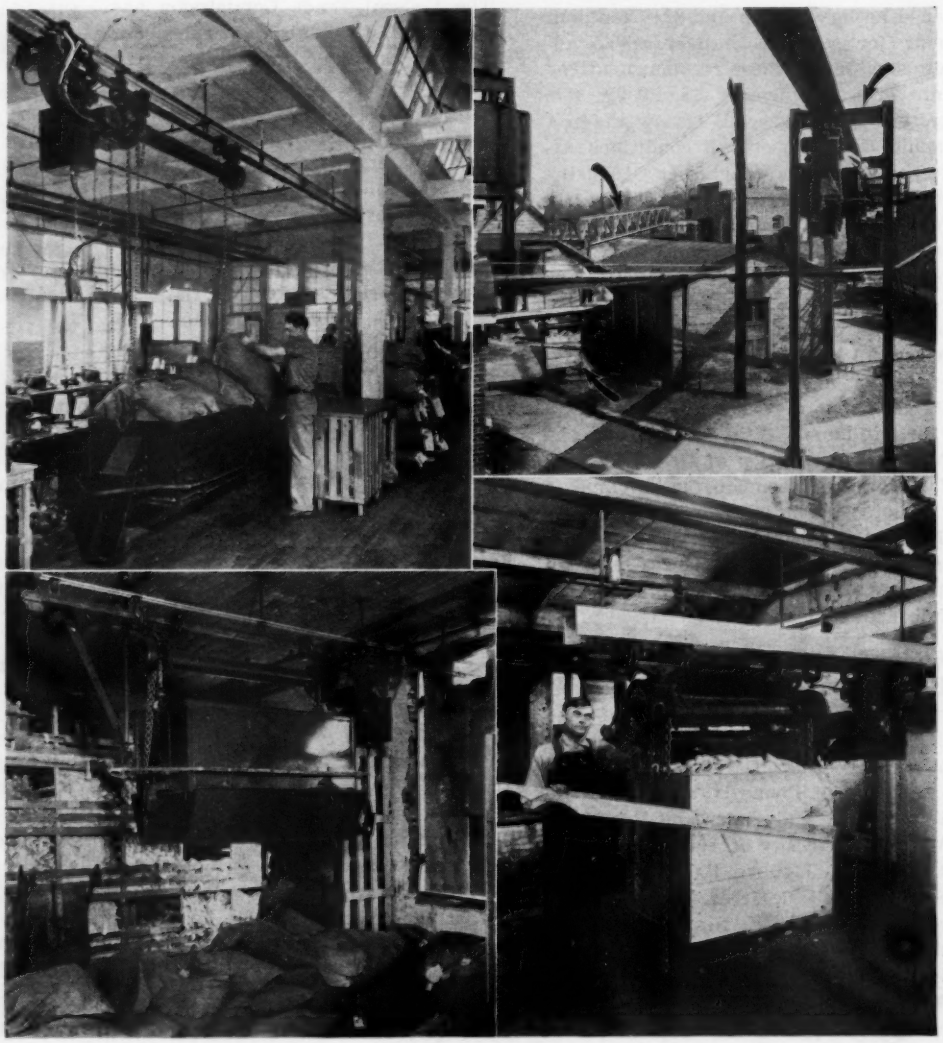
"Styles designed by the Bureau include nurses' stockings, cobweb meshes, many novelty sport weaves, and several types of hose for special purposes. Special emphasis is being kept on hose for service and sports wear.

Materials-Handling in Hosiery Mill

THE accompanying photos are an excellent example of materials-handling in a knitting mill. The pictures were made of an overhead-hoist automatic dispatch system at the Union Manufacturing Company, Union Point, Ga. The preliminary processing departments, the grey goods storage, and the dyeing department are in different buildings, so the dispatch system solves the problem of getting the goods *where* they are wanted, much more *readily* and *easier*.

Photo at upper left shows operative loading the bags of socks that have been looped (in one building) into the carrier. Automatically the carrier takes the hosiery to the grey goods storage (in another building) transporting them through the mill yard; see photo at upper right. Lower left photo shows dispatch system emptying bags of hosiery automatically in grey goods storage room. Carrier also returns to first building automatically.

Lower right, another dispatch system leading from grey storage to dyehouse. Carrier is loaded and dispatched, and when reaching dyehouse stops automatically. In dyehouse an empty box is placed on carrier and dispatched back to grey goods storage, where it again stops automatically. *Courtesy American MonoRail Company.*



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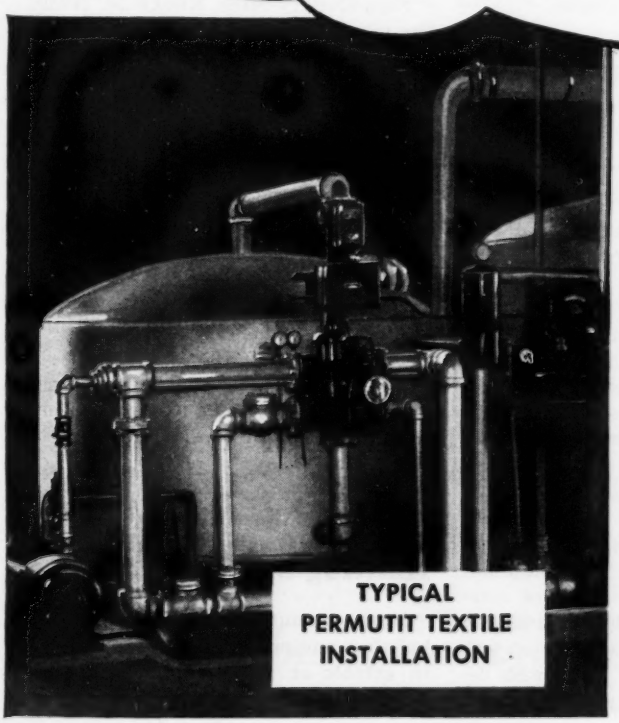

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WATER CONDITIONING HEADQUARTERS

North Gains in Number of Full-Fashioned Plants

Expansion of the full-fashioned hosiery industry in the South last year did not maintain the momentum of recent years. A report has been compiled by the National Association of Hosiery Manufacturers disclosing that actually the industry's northern division had regained its stride after barely holding its own during the previous four years. The South in February of this year was operating 178 mills as compared with 140 in January 1939, and 86 in January 1937 and 71 in April 1935. The North was operating 316 this month compared with 256 in January 1939 and 263 in January 1937 and 254 in April 1935. From these data it will be seen that the percentage of increase was about the same in both sections during 1940, with the North holding the edge in the actual number of plants.

One explanation of the fact that the southern division did not forge ahead in 1940 to the extent of earlier years is found in the continued wage concessions by the American Federation of Hosiery Workers to northern mills in order to conserve their capital with which to modernize their plants with new machinery. The wage advantage long held by southern manufacturers was therefore less of a factor. Secondly, was the gradual opposition of southern communities to grants of free mill sites, financial aid, and exemption from county taxes. The southern branch of the full-fashioned industry is now more than half the size of the northern division.

Another factor is the Wage and Hour Law which has in recent years contributed toward removing some of the South's previous labor advantage. In the seamless division however the southern field is far in the lead and likely to remain so. The lower labor rates on these cheaper goods, although now threatened by an adjustment upward as a result of the union's petition to the Wage and Hour Division in Washington have not been found acceptable by the northern knitters. A recent report revealed 340 seamless mills in the South and only 172 in the North.

An Eye on the Knitting Mills

Manchester Dyeing & Finishing Company has taken over the bag mill of the Amoskeag Mills, Manchester, N. H., and will specialize in the dyeing and finishing of hosiery, furnishing employment for nearly a thousand workers. New machinery is being installed and operations will start shortly. The plant will be used for finishing products whose preliminary processes are carried out in plants outside of the state of New Hampshire.

Larkwood Silk Hosiery Mills, Charlotte, N. C., will build an addition to its present plant for a boarding room and for pre-boarding nylon. Space in the main building now used for these operations will be converted into additional finishing room. The company will also manufacture a new "Georgette" hose that is said to be more snag-resistant and of better wearing qualities.

Charles H. Bacon Company, with hosiery mills in Lenoir City and Loudon, Tenn., has purchased $100,000 worth of new full-fashioned hosiery equipment suitable for the manufacture of nylon stockings. It is understood that the new machinery will be installed at Loudon as soon as it can be shipped from the factory, where it is being held up on account of present defense work.

At Valdese, N. C., where several circular and full-fashioned hosiery mills are located, the high school has organized a class in looping to meet the shortage of trained loopers in the hosiery industry. The students receive credit for the practical course.

The W. P. Elliott Knitting Mill, Marion, N. C., has been sold and Mr. Elliott has announced plans for starting a new mill. Charles Barnes, for some time associated with Mr. Elliott, purchased the plant.

Robert Jackson, secretary and treasurer of the Gastonia (N.C.) Full-Fashioned Hosiery Company, Inc., has purchased the Cheraw (S.C.) Hosiery Mill, which has been idle for some time, and will reopen the plant.

It is reported that a new cooperative hosiery mill is being planned for Weissport, Pa., the Weissport Hosiery Mills, Inc. Donald V. Smith, formerly with the Vortex Hosiery Mills, is manager.

Alabama Hosiery Mills, Inc., Decatur, Ala., will install a number of new 45-gauge full-fashioned machines the investment amounting to about $75,000 and giving employment to about 50 additional persons.

Varynit Mills, Inc., Franklin, Ind., is a new concern which will manufacture knitted underwear and sportswear, employing at first about 200 operatives.

Hoover Hosiery Company, Concord, N. C., has installed 51-gauge full-fashioned machines, which will be used exclusively in the manufacture of nylon hosiery.

Knit-to-Fit Manufacturing Company, Ltd., Montreal, Canada, will erect a 5-story addition at an estimated cost of $75,000.

Headland (Ala.) Hosiery Mills, Inc., has begun construction on one unit of the three-unit plant.

Park Hosiery Mills, Knoxville, Tenn., has moved its plant to 612 East Depot Street.

Dixie Hosiery Mills, Newport, Tenn., is expected to reopen at an early date.

Hosiery Union Demands Apex Suit Arbitration

A petition was filed by the American Federation of Hosiery Workers, Philadelphia local, late last month in Philadelphia, to have the court order arbitration of the claim of Apex Hosiery Company against the union. This suit resulted from destruction of the company's property during a sit down strike in the spring of 1937. The hosiery company filed the present suit in Common Pleas Court last August following a decision by the United States Supreme Court that the Pennsylvania Court was the proper tribunal in which to bring such an action for damages.

Counsel for the union argued that the damage claimed came within the purview of the 1938 agreement between Apex and the union. He declared this agreement was broad enough to cover such a situation and was not restricted merely to matters of wages, working hours, and working conditions. He also told the court it was his contention the hosiery federation could not be held liable for any damages committed by members of the Philadelphia Local. The motion for arbitration was opposed by counsel for Apex who declared that the disputes referable to arbitration under terms of the agreement do not include claims arising from destruction and demolition of property of a party to the agreements. He argued it is only a collective bargaining agreement covering hours, wages and general working conditions. "It is obvious," he asserted, "That disputes outside of the scope of the agreement were never intended to be submitted to arbitration."

Seamless Machinery Exhibits Out of 1941 Knitting Show

Most manufacturers of seamless knitting equipment are not preparing to exhibit at the 1941 Knitting Arts Exhibition, according to the National

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Association of Hosiery Manufacturers. It is understood that Scott & Williams, Inc., and the Hemphill Co., both of whom had space at last year's exhibit will not display their products this year. It is also understood Wildman Manufacturing Co., H. Brinton Co., and Fidelity Machine Co. were not represented at the 1940 Exhibition and also will not exhibit at the 1941 Show. All manufacturers of standard full-fashioned knitting equipment have reserved their customary spaces for the exhibition and this is generally true with the exception of the seamless companies.

Utica Knitting Co. Gives Wage Increase

Utica Knitting Co. officials including Oscar W. Gridley, president, and Ralph M. Jones, vice president, and agents of the Textile Workers Union of America, have signed an agreement by which this large knitting company granted a wage raise of 7 per cent effective March 3 and one week's vacation with pay for all employees with one year or more of service. More than 2,000 employees of the knitting company's mills in Utica, Sherburne, and Oriskany Falls are affected by the new terms. It was stated that this will add more than $140,000 to the annual payroll of about $2,000,000. Other parts of the agreement are a guarantee by the union of no strikes or shortages and by the company of no lockout. Preferential union shop is also granted and time and half for overtime is to be paid above the 8 hour day and 40 hours to the week. Arbitration is also provided for all disputes with machinery provided for negotiations. Vice President Jones said that the company has received many Government orders and that it is working almost to capacity with every prospect of the present activity continuing.

Woolen Bundle Socks Aided by Army Orders

Increased demand as a result of the national defense program is giving the woolen bundle goods branch of the hosiery industry its most active season in many years. In addition the Army recently opened bids on 17,000,000 pairs which are expected to keep the knitters engaged at a capacity rate through the spring months. What such orders have already contributed to the industry may be seen by the record of shipments during the past year. The rise over 1939 was 30.4 per cent. The total of such goods amounting to 2,331,027 dozen pairs in 1940.

This expansion in volume was especially large in the final quarter of last year when shipments rose 49 per cent over the last quarter of 1939. At the end of 1940 stocks amounted to only 224,317 dozen pairs, a decline of 11.7 per cent from the previous year end. That quantity, the National Association of Hosiery Manufacturers points out, was sufficient to cover only a fraction more than the average month's demand. In addition to the large military orders mills are receiving an active inquiry for civilian merchandise, many buyers fearing that a higher minimum for seamless knitters will soon be named.

More Diversified Outlets Coming for Nylon Yarn

That the outlets for nylon yarn are to be more diversified than in the recent past is indicated. About 90 per cent of the total nylon yarn production of the du Pont company has been going to the hosiery trade. Recently manufacturers have brought out lines of nylon neckties, the use of nylon in underwear is reported, and the use of the new yarn in other fields is reported under way. It has been officially announced that total production of nylon yarn at Seaford, Del., will be about 8,000,000 pounds a year, half for the original plant and half for the addition. Taylor R. Durham, executive secretary of the Southern Hosiery Manufacturers Association, estimated approximately 40 per cent of the American full fashioned hosiery yarn requirements will be supplied a year from now by three nylon mills which will be in production by that time. Average monthly shipments of nylon full fashioned hosiery for the four months, October 1940 through January 1941, were 427,000 dozen pairs, and many in the trade expect nylon hosiery prices at retail to be lower by summer.

Per Capita Hose Use Off Slightly in 1940

Average per capita consumption of hosiery in 1940 was 12.4 pairs, a fraction below 1939 but higher than any year back to and including 1929. The rapid growth of slack socks did not augment the per capita consumption of men's goods but simply replaced a similar amount of half-hose. In reporting on this the National Association of Hosiery Manufacturers noted that the constant increase and use in slack socks was checked last year. About two-thirds of the slack socks produced in the fall of 1940 were knit with elastic in the top compared with slightly less than one-half with elastic in the tops produced in the fall of 1939. In contrast, only 7½ per cent of the half hose was produced with elastic during the fall of 1940 which was scarcely more than half the proportion produced in the fall of 1939. The proportion of the combined total of half hose and slack socks knit with elastic in the top during the fall of 1940 averaged 20 per cent.

Hosiery Mill Stocks Smaller

Hosiery mill stocks at the end of 1940, as reported by the National Association of Hosiery Manufacturers, showed a favorable change from the middle of that year. Stocks of all types of hosiery totaled 23,510,000 dozens compared with 26,383,000 dozens at the end of June. There was a steady decline in these stocks for every month from then on. In the women's full-fashioned division stocks at the end of December were 5,627,000 dozens while at the end of June last year they were 7,250,000 dozens. The stocks of nylon hosiery at the end of December last were 235,000 dozens. In the seamless division of the industry, stocks at the end of the year were 17,883,000 dozens compared with 19,133,000 dozens at the end of June last year.

Underwear Mills Active

Knitting machine activity with underwear mills was sharply increased this January compared with a year ago. The increase was attributed to an important extent to the large Government purchases of both heavy and light weight for Army use. The number of knitting machines in operation the first month of this year was 10,922 compared with 9,878 for the same month last year. A continuation of this activity is indicated by the large volume of unfilled orders including Government purchases. Bookings by mills for their regular trade for next fall of heavy shirts and drawers have also been earlier and heavier in volume than for several years. In view of this, the prospect is underwear knitters will be active for months ahead.

Besse Again Heads Wool Manufacturers

Arthur Besse was re-elected president of the National Association of Wool Manufacturers at the 76th annual meeting, Hotel Commodore, New York, February 19. Others re-elected were Walter Humphreys, secretary and treasurer; Franklin W. Hobbs, Moses Pendleton, Thurmond Chatham, W. V. E. Terhune and Harold J. Walter, vice-presidents.

Institute to Study Textile Living Standards

Ellen H. Richards Institute is a consolidated working research unit recently organized at Pennsylvania State College, State College, Pa., to study improvements in standards of living in the field of foods, textiles and shelter. Dr. Pauline Beery Mack is director.

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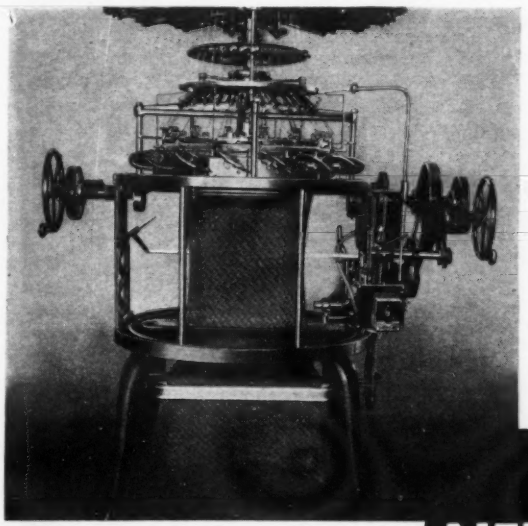

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BOOTHS 270, 271, etc., at the Knitting Arts Exhibition.

TRENDS—YARN MARKETS

Prices of All Yarns Advancing Except Rayon—Deliveries a Problem in Many Types of Cotton Yarns—Mercerizers Also Put Higher List in Effect—Far East Situation Factor in Silk Rise—Deliveries Large and New Business Placed Further Ahead

Philadelphia, March 15, 1941

THERE HAS BEEN a very firm price tone to the yarn markets this month, excluding rayon, where unchanged lists remain in effect. Wool has been firm, cotton has advanced and silk is more than twenty-five cents higher than a month back with coverage by hosiery mills more active due to fears that supplies of this commodity may not be easily available if events in the Far East become more explosive. Manufacturers are reaching more for yarns of all types, feeling that they should have orders down to protect themselves against future price increases and also delivery problems. This all makes for a bullish sentiment and that is what has developed, this being especially so in ply combed yarns which are largely used in military fabrics and garments. Combed spinners in instances are sold ahead until the late summer months.

Cotton Yarn

The past month has been an unusual one so far as sales of cotton yarns are concerned, being marked by sharp price increases which were accompanied by very active coverage. Manufacturers have not only been buying larger quantities but they have been operating further ahead with some knitting yarn having been contracted for up to the end of the present year and a few going even into the first quarter of next year. This increased activity has been brought about by an active demand for most lines of cotton goods but it has been accelerated by two main fears on the part of manufacturers. They are concerned over the possibility they may have to pay still higher prices and they are also becoming very much disturbed at the delays in deliveries now being experienced. In fact the delivery situation has become so bothersome in some sections of the yarn market that manufacturers are looking forward in the near future to the possibility the Government may step in and set up priorities for delivery of certain types of yarn.

In the foreground in this connection are two-ply combed yarns in which there is a very unusual situation at present, due in part to the large quantities of such yarns being used in military garments and cloths. This situation affects knitters in various ways, the most important being the effect it is having on mercerized yarn prices and deliveries. The higher two-ply combed yarn prices are forced, the higher mercerized yarns will have to go and March 10 mercerizers advanced their prices 4 to 8 cents, placing these yarns at the highest level in many months with no indication that the end is in sight. The new price list on mercerized yarns places 60s two-ply ungassed at 82 cents compared with 78 cents in a previous list that became effective late in January of this year.

There has been a major price advance in both carded and combed yarns this month. In carded knitting cones the advance to date has been about 2 cents a pound on 10s which are now held at 25 cents compared with 23 cents a month ago. In the combed section of the market the advance has been even sharper with 30s single now being held at 43 cents which a month ago was at 38 to 39 cents. This increase is of major importance to knitting manufacturers of all types as it will increase their costs considerably. This is especially so when it is recalled that not many months back 30s single combed peeler sold down to 30 cents for the same yarn that is now bringing 43 cents, while mercerized yarns now selling at 82 cents a little more than a year ago was about 20 cents a pound lower. There has been such a sharp rise in cotton yarn prices over recent weeks that there are unconfirmed rumors the Government may step in and set a ceiling in order to protect itself on the large volume of such goods it is buying at present.

Silk

Raw silk also has been very strong during the last few weeks and has advanced in the last month more than 25 cents per pound, this being the strongest market in this commodity in a number of months. While the advance has been marked by an increase in buying by hosiery manufacturers it is noticeable that coverage has not been nearly so heavy in silk as in most other textile fibers. In fact manufacturers have been so reluctant to follow the advance that many in the trade are urging them to operate a little bit more freely than they have. As is usual when silk prices rise there is renewed discussion relative to substituting rayon for silk in various types of knit goods such as welts of women's full-fashioned goods.

Raw silk mill takings during February were slightly smaller than the previous month but considerably larger than the same month a year previous. Takings during February amounted to 28,111 bales which were in line with expectations. This figure compares with 28,425 bales in the preceding month and with 22,485 bales in February a year ago. Stocks in New York again were reduced and stood at 54,106 bales at the end of February and at the end of January supplies amounted to 63,433 bales and at end of February a year previous they stood at 50,306 bales. Imports of raw silk into the United States totaled 18,784 bales in February compared with 19,610 bales in January and 13,566 bales in February a year ago. Silk in transit from Japan to the United States at the end of February amounted to 16,100 bales.

Rayon

Based on the rate of shipments so far this month rayon producers estimate that March deliveries to mills will show an increase over those of February. There was a slight increase in reserved stock at the end of February which was due to smaller acetate yarn shipments. Demand for acetate, however, has been showing a steady upturn since the beginning of this month with the result that stock in producers' hands are melting rapidly. The increase in silk has caused a greater demand for fine denier yarns from the hosiery trade and such manufacturers would like to obtain these numbers for use in tops and feet of full-fashioned stockings in case it might be necessary to reduce the silk content. Rayon yarn producers in February shipped filament yarn amounting to 31,600,000 pounds compared with 34,300,000 pounds in January. Stocks at the end of February were about 1,000,000 pounds larger than at the end of the previous month.

Worsted Yarn

There has been a sharp advance in worsted knitting yarns this month with many spinners asking 10 cents a pound higher. At the same time the prices have been rising manufacturers have been buying larger quantities while spinners have been endeavoring to hold down incoming business. Outerwear manufacturers are doing a much larger volume of business and they are taking deliveries from spinners in such an active manner that spinning equipment is now being operated at about full time rates or better. In addition to civilian demand for worsted knitting yarns large amounts of hand knitting numbers are being used in home knitting both for private work and for use in Red Cross knitting. There are several spinners of knitting yarns in this section that are operating full time on Red Cross yarn business alone.

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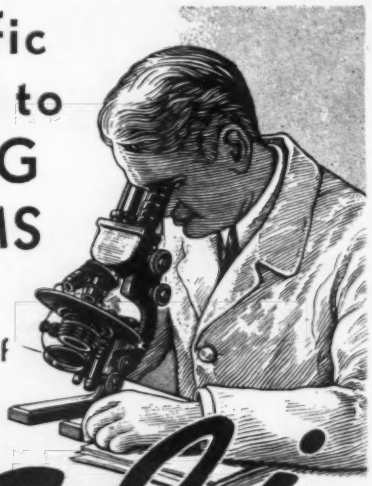

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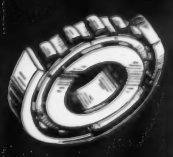

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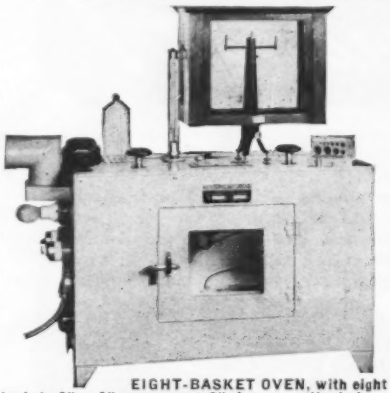

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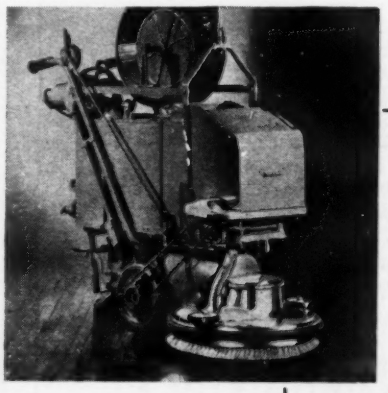

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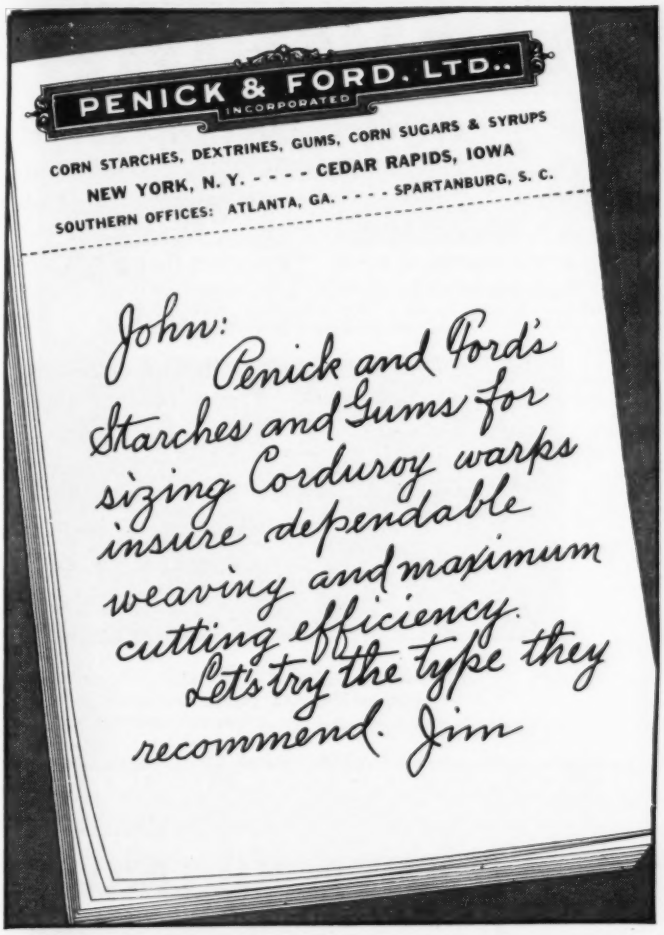
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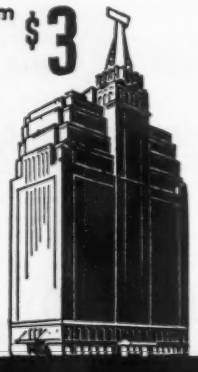

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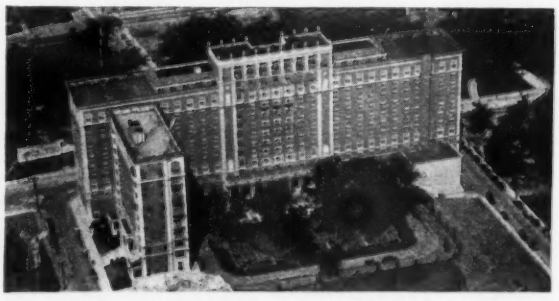

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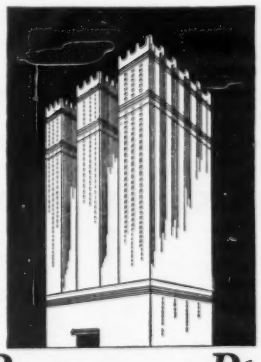

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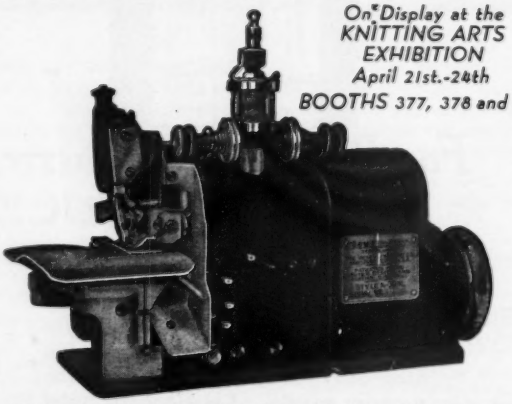

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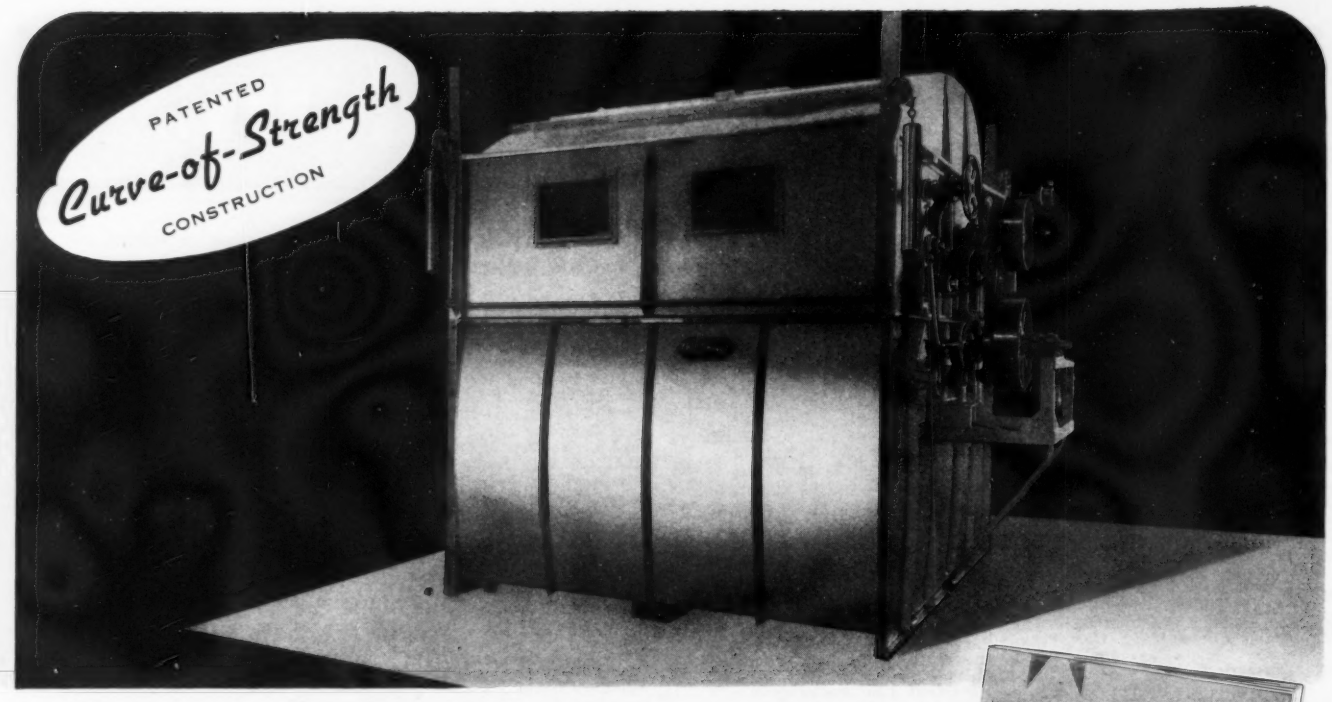

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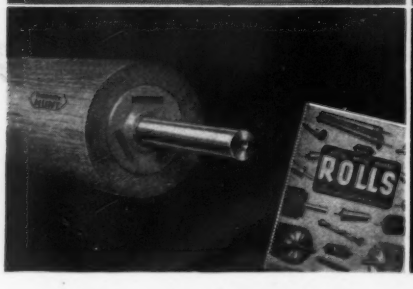

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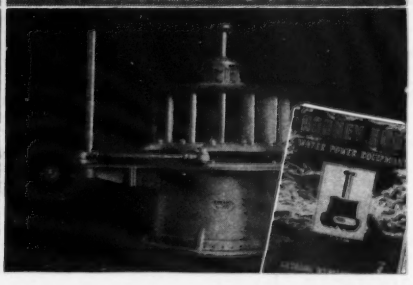

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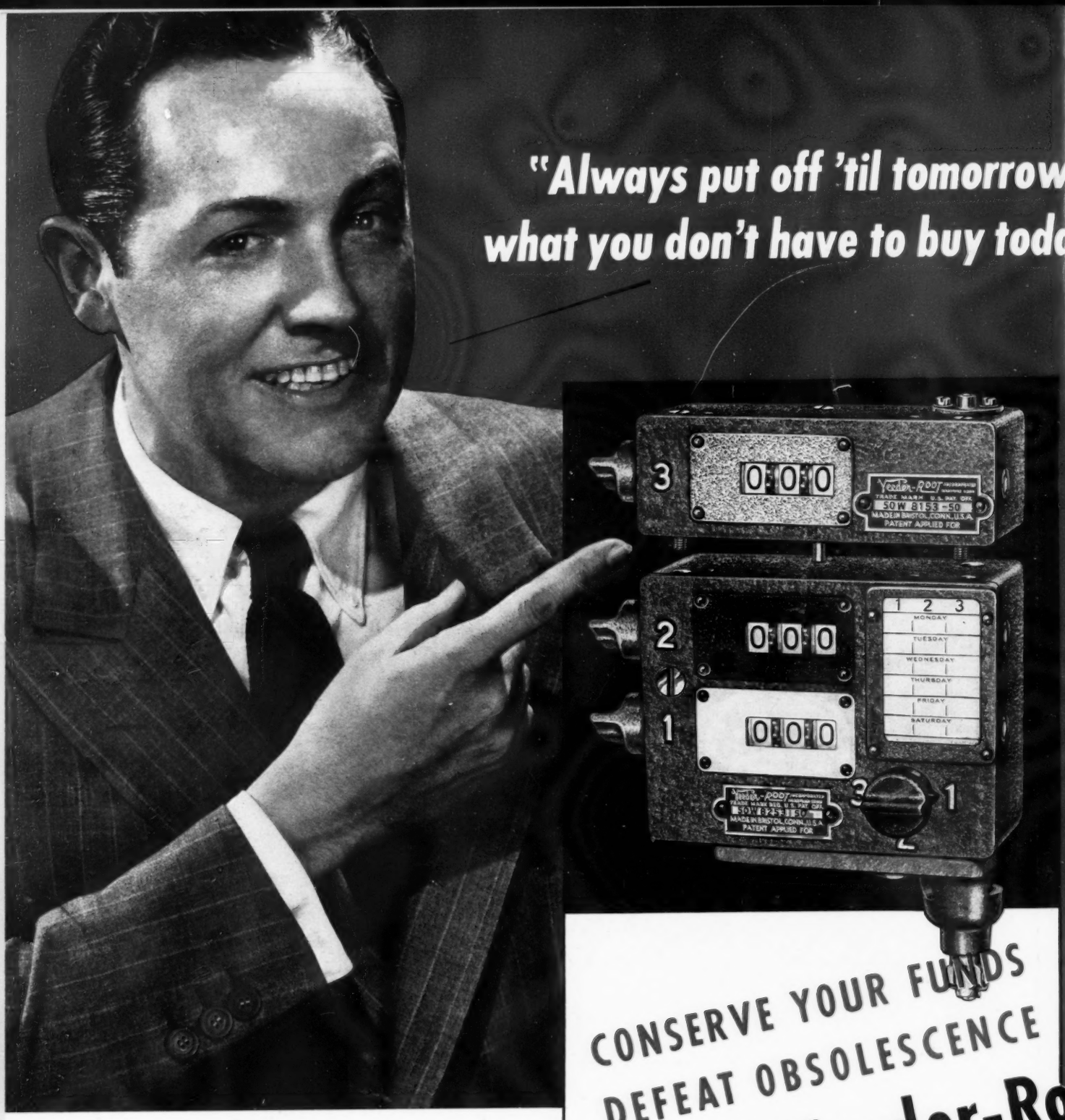

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